Supreme Court, U. S.
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IN THE

Supreme Court of the United States

October Term, 1975

No. 75-1657

STATE OF NORTH CAROLINA,

Petitioner,

v.

FEDERAL POWER COMMISSION,

Respondent,

APPALACHIAN POWER COMPANY, INC.,
COMMONWEALTH OF VIRGINIA,
STATE OF WEST VIRGINIA,

Intervenors.

ON WRIT OF CERTIORARI
TO THE UNITED STATES COURT OF APPEALS FOR
THE DISTRICT OF COLUMBIA CIRCUIT

PETITION FOR WRIT OF CERTIORARI

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PETITION FOR WRIT OF CERTIORARI

Petitioner prays that a writ of certiorari issue to review the judgment of the United States Court of Appeals for the District of Columbia Circuit entered March 24, 1976.

CITATIONS TO OPINIONS BELOW

The March 24, 1976, opinion of the United States Court of Appeals for the District of Columbia Circuit is not yet published. It is set out in the appendix, infra, pp. 50-61. The opinion and order of the Federal Power Commission reviewed by the Court of Appeals is not published, and is set out in the appendix, infra, pp. 62-144.

JURISDICTION

The judgment of the United States Court of Appeals for the District of Columbia Circuit was entered on March 24, 1976. Jurisdiction of this Court is invoked under 28 U.S.C. sec. 1254(1) and 16 U.S.C. sec. 8251(b). Jurisdiction of the United States Court of Appeals for the District of Columbia Circuit was founded upon 16 U.S.C. sec. 825*l*(b). Jurisdiction of the Federal Power Commission was founded upon 16 U.S.C. sec. 797(e).

QUESTIONS PRESENTED

1. Did the Federal Power Commission fail to give adequate consideration to the scenic river alternative in its environmental impact statement in violation of the National Environmental Policy Act?

2. Should the licensing proceeding be dismissed for mootness as a result of either the Secretary of the Interior's approval of the New River as a scenic river, or the application of the Governor of North Carolina making the river a scenic study river?

3. Should the license for the project be set aside because Appalachian Power Company caused the Federal Power Commission to violate federal statutes and regulations pertaining to historical and archaeological properties?

4. Did the Court of Appeals misapply the National Environmental Policy Act and *Udall v. Federal Power Commission* in upholding the Federal Power Commission's consideration of the impact of energy conservation measures such as peak load pricing and reduced demand on the need for the project?

5. Was the question of the Federal Power Commission's consideration of the scenic river alternative adequately raised to require judicial review by the application for rehearing?

CONSTITUTIONAL AND STATUTORY PROVISIONS INVOLVED

16 U.S.C. sec. 469a-1

Same; threat of irreparable loss or destruction of significant scientific prehistorical, historical, or archaeological data by Federal construction projects; notice to Secretary of Interior; survey; recovery, preservation, and protection of data.

(a) Whenever any Federal agency finds, or is notified, in writing, by an appropriate historical or archeological authority, that its activities in connection with any Federal construction project or federally licensed project, activity, or program may cause irreparable loss or destruction of significant scientific, prehistorical, historical, or archeological data, such agency shall notify the Secretary, in writing, and shall provide the Secretary with appropriate information concerning the project, program, or activity. Such agency may request the Secretary to undertake the recovery, protection, and preservation of such data (including preliminary survey, or other investigation as needed, and analysis and publication of the reports resulting from such investigation), or it may, with funds appropriated for such project, program, or activity, undertake such activities. Copies of reports of any investigations made pursuant to this section shall be submitted to the Secretary, who shall make them available to the public for inspection and review.

(b) Whenever any Federal agency provides financial assistance by loan, grant, or otherwise to any private person, association, or public entity, the Secretary, if he determines that significant scientific, prehistorical, historical, or archeological data might be irrevocably lost or destroyed, may with funds appropriated expressly for this purpose conduct, with the consent of all persons, associations, or public entities having a legal interest in the property involved, a survey of the affected site and undertake the recovery, protection, and preservation of such data (including analysis and publication). The Secre-

tary shall, unless otherwise mutually agreed to in writing, compensate any person, association, or public entity damaged as a result of delays in construction or as a result of the temporary loss of the use of private or any nonfederally owned lands.

16 U.S.C. sec. 825*l*

Rehearings; court review of orders

(a) Any person, State, municipality, or State commission aggrieved by an order issued by the Commission in a proceeding under this chapter to which such person, State, municipality, or State commission is a party may apply for a rehearing within thirty days after the issuance of such order. The application for rehearing shall set forth specifically the ground or grounds upon which such application is based. Upon such application the Commission shall have power to grant or deny rehearing or to abrogate or modify its order without further hearing. Unless the Commission acts upon the application for rehearing within thirty days after it is filed, such application may be deemed to have been denied. No proceeding to review any order of the Commission shall be brought by any person unless such person shall have made application to the Commission for a rehearing thereon. Until the record in a proceeding shall have been filed in a court of appeals, as provided in subsection (b) of this section, the Commission may at any time, upon reasonable notice and in such manner as it shall deem proper, modify or set aside, in whole or in part, any finding or order made or issued by it under the provisions of this chapter.

(b) Any party to a proceeding under this chapter aggrieved by an order issued by the Commission in such proceeding may obtain a review of such order in the United States Court of Appeals for any circuit wherein the licensee or public utility to which the order relates is located or has its principal place of business, or in the United States Court of Appeals for the District of Columbia, by filing in such court, within sixty days after the order of the Commission upon the application for

rehearing, a written petition praying that the order of the Commission be modified or set aside in whole or in part. A copy of such petition shall forthwith be transmitted by the clerk of the court to any member of the Commission and thereupon the Commission shall file with the court the record upon which the order complained of was entered, as provided in section 2112 of Title 28. Upon the filing of such petition such court shall have jurisdiction, which upon the filing of the record with it shall be exclusive, to affirm, modify, or set aside such order in whole or in part. No objection to the order of the Commission shall be considered by the court unless such objection shall have been urged before the Commission in the application for rehearing unless there is reasonable ground for failure so to do. The finding of the Commission as to the facts, if supported by substantial evidence, shall be conclusive. If any party shall apply to the court for leave to adduce additional evidence, and shall show to the satisfaction of the court that such additional evidence is material and that there were reasonable grounds for failure to adduce such evidence in the proceedings before the Commission, the court may order such additional evidence to be taken before the Commission and to be adduced upon the hearing in such manner and upon such terms and conditions as to the court may seem proper. The Commission may modify its findings as to the facts by reason of the additional evidence so taken, and it shall file with the court such modified or new findings which, if supported by substantial evidence, shall be conclusive, and its recommendation, if any, for the modification or setting aside of the original order. The judgment and decree of the court, affirming, modifying, or setting aside, in whole or in part, any such order of the Commission, shall be final, subject to review by the Supreme Court of the United States upon certiorari or certification as provided in sections 346 and 347 of Title 28.

(c) The filing of an application for rehearing under subsection (a) of this section shall not, unless specifically ordered by the Commission, operate as a stay of the Commission's

order. The commencement of proceedings under subsection (b) by this section shall not, unless specifically ordered by the court, operate as a stay of the Commission's order.

Wild and Scenic Rivers Act
16 U.S.C. sec. 1271 et seq.

§ 1271. *Congressional Declaration of Policy*

It is hereby declared to be the policy of the United States that certain selected rivers of the Nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations. The Congress declares that the established national policy of dam and other construction at appropriate sections of the rivers of the United States needs to be complemented by a policy that would preserve other selected rivers or sections thereof in their free-flowing condition to protect the water quality of such rivers and to fulfill other vital national conservation purposes.

§ 1272. *Congressional Declaration of Purpose*

The purpose of this chapter is to implement the policy set out in section 1271 of this title by instituting a national wild and scenic rivers system, by designating the initial components of that system, and by prescribing the methods by which and standards according to which additional components may be added to the system from time to time.

§ 1273. *National Wild and Scenic Rivers System; Congressional Authorization For Inclusion; Designation By State Legislatures; Permanent Administration By States; Application For Inclusion By Governors; Satisfaction Of Criteria; Eligibility For Inclusion.*

(a) The national wild and scenic rivers system shall comprise rivers (i) that are authorized for inclusion therein by

Act of Congress, or (ii) that are designated as wild, scenic or recreational rivers by or pursuant to an act of the legislature of the State or States through which they flow, that are to be permanently administered as wild, scenic or recreational rivers by an agency or political subdivision of the State or States concerned without expense to the United States, that are found by the Secretary of the Interior, upon application of the Governor of the State or the Governors of the States concerned, or a person or persons thereunto duly appointed by him or them to meet the criteria established in this chapter and such criteria supplementary thereto as he may prescribe, and that are approved by him for inclusion in the system, including, upon application of the Governor of the State concerned, the Allagash Wilderness Waterway, Maine, and that segment of the Wolf River, Wisconsin, which flows through Langlade County.

(b) A wild, scenic or recreational river area eligible to be included in the system is a free-flowing stream and the related adjacent land area that possesses one or more of the values referred to in section 1271 of this title. Every wild, scenic or recreational river in its free-flowing condition, or upon restoration to this condition, shall be considered eligible for inclusion in the national wild and scenic rivers system and, if included, shall be classified, designated, and administered as one of the following:

(1) Wild river areas—Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.

(2) Scenic river areas—Those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.

(3) Recreational river areas—Those rivers or sections

of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past.

§ 1274. *Component Rivers and Adjacent Lands; Establishment of Boundaries; Classification; Development Plans.*

(a) The following rivers and the land adjacent thereto are hereby designated as components of the national wild and scenic rivers system:

[Remainder of subsection (a) omitted.]

(b) The agency charged with the administration of each component of the national wild and scenic rivers system designated by subsection (a) of this section shall, within one year from October 2, 1968, establish detailed boundaries therefor (which boundaries shall include an average of not more than three hundred and twenty acres per mile on both sides of the river); determine which of the classes outlined in section 1273(b) of this title best fit the river or its various segments; and prepare a plan for necessary developments in connection with its administration in accordance with such classification. Said boundaries, classification, and development plans shall be published in the Federal Register and shall not become effective until ninety days after they have been forwarded to the President of the Senate and the Speaker of the House of Representatives.

§ 1275. *Additions to National Wild and Scenic Rivers System —Reports by Secretaries of Interior and Agriculture; Recommendations to Congress; Contents of Reports.*

(a) The Secretary of the Interior or, where national forest lands are involved, the Secretary of Agriculture or, in appropriate cases, the two Secretaries jointly shall study and submit to the President reports on the suitabiliy or nonsuitability for addition to the national wild and scenic rivers system of rivers which are designated herein or hereafter by the Congress

as potential additions to such system. The President shall report to the Congress his recommendations and proposals with respect to the designation of each such river or section thereof under this chapter. Such studies shall be completed and such reports shall be made to the Congress with respect to all rivers named in section 1276(a)(1) through (27) of this title no later than October 2, 1978. In conducting these studies the Secretary of the Interior and the Secretary of Agriculture shall give priority to those rivers with respect to which there is the greatest likelihood of developments which, if undertaken, would render the rivers unsuitable for inclusion in the national wild and scenic rivers system. Every such study and plan shall be coordinated with any water resources planning involving the same river which is being conducted pursuant to the Water Resources Planning Act.

Each report, including maps and illustrations, shall show among other things the area included within the report; the characteristics which do or do not make the area a worthy addition to the system; the current status of land ownership and use in the area; the reasonably foreseeable potential uses of the land and water which would be enhanced, foreclosed, or curtailed if the area were included in the national wild and scenic rivers system; the Federal agency (which in the case of a river which is wholly or substantially within a national forest, shall be the Department of Agriculture) by which it is proposed the area, should it be added to the system, be administered; the extent to which it is proposed that such administration, including the costs thereof, be shared by State and local agencies; and the estimated cost to the United States of acquiring necessary lands and interests in land and of administering the area, should it be added to the system. Each such report shall be printed as a Senate or House document.

Study of Report By Affected Federal and State Officials; Recommendations and Comments; Transmittal to President and Congress.

(b) Before submitting any such report to the President and the Congress, copies of the proposed report shall, unless it was prepared jointly by the Secretary of the Interior and the Secretary of Agriculture, be submitted by the Secretary of the Interior to the Secretary of Agriculture or by the Secretary of Agriculture to the Secretary of the Interior, as the case may be, and to the Secretary of the Army, the Chairman of the Federal Power Commission, the head of any other affected Federal department or agency and, unless the lands proposed to be included in the area are already owned by the United States or have already been authorized for acquisition by Act of Congress, the Governor of the State or States in which they are located or an officer designated by the Governor to receive the same. Any recommendations or comments on the proposal which the said officials furnish the Secretary or Secretaries who prepared the report within ninety days of the date on which the report is submitted to them, together with the Secretary's or Secretaries' comments thereon, shall be included with the transmittal to the President and the Congress. No river or portion of any river shall be added to the national wild and scenic rivers system subsequent to October 2, 1968, until the close of the next full session of the State legislature, or legislatures in case more than one State is involved, which begins following the submission of any recommendation to the President with respect to such addition as herein provided.

Publication in Federal Register

(c) Before approving or disapproving for inclusion in the national wild and scenic rivers system any river designated as a wild, scenic or recreational river by or pursuant to an act of a State legislature, the Secretary of the Interior shall submit the proposals to the Secretary of Agriculture, the Secretary of the Army, the Chairman of the Federal Power Commission, and the head of any other affected Federal department or agency and shall evaluate and give due weight to any recommendations or comments which the said officials furnish him within ninety days of the date on which it is submitted to

them. If he approves the proposed inclusion, he shall publish notice thereof in the Federal Register.

§ 1276. *Rivers Constituting Potential Additions to National Wild and Scenic Rivers System—Enumeration of Designated Rivers.*

(a) The following rivers are hereby designated for potential addition to the national wild and scenic rivers system:

[Remainder of subsection (a) omitted.]

Studies and Reports

(b) (1) The studies of rivers named in subparagraphs (28) through (55) of subsection (a) of this section shall be completed and reports thereon submitted by not later than October 2, 1979: *Provided*, That with respect to the rivers named in subparagraphs (33), (50), and (51), the Secretaries shall not commence any studies until (i) the State legislature has acted with respect to such rivers or (ii) one year from January 3, 1975, whichever is earlier.

(2) The study of the river named in subparagraph (56) of subsection (a) of this section shall be completed and the report thereon submitted by not later than January 3, 1976.

(3) There are authorized to be appropriated for the purpose of conducting the studies of the rivers named in subparagraphs (28) through (56) such sums as may be necessary, but not more than $2,175,000.

State Participation

(c) The study of any of said rivers shall be pursued in as close cooperation with appropriate agencies of the affected State and its political subdivisions as possible, shall be carried on jointly with such agencies if request for such joint study is made by the State, and shall include a determination of the degree to which the State or its political subdivision might participate in the preservation and administration of the river

should it be proposed for inclusion in the national wild and scenic rivers system.

Continuing Consideration By Federal Agencies to Potential National Wild, Scenic and Recreational River Areas.

(d) In all planning for the use and development of water and related land resources, consideration shall be given by all Federal agencies involved to potential national wild, scenic and recreational river areas, and all river basin and project plan reports submitted to the Congress shall consider and discuss any such potentials. The Secretary of the Interior and the Secretary of Agriculture shall make specific studies and investigations to determine which additional wild, scenic and recreational river areas within the United States shall be evaluated in planning reports by all Federal agencies as potential alternative uses of the water and related land resources involved.

[Section 1277 omitted.]

§ 1278. *Restrictions On Water Resources Projects — Construction Projects Licensed By Federal Power Commission.*

(a) The Federal Power Commission shall not license the construction of any dam, water conduit, reservoir, powerhouse, transmission line, or other project works under the Federal Power Act, as amended, on or directly affecting any river which is designated in section 1274 of this title as a component of the national wild and scenic rivers system or which is hereafter designated for inclusion in that system, and no department or agency of the United States shall assist by loan, grant, license, or otherwise in the construction of any water resources project that would have a direct and adverse effect on the values for which such river was established, as determined by the Secretary charged with its administration. Nothing contained in the foregoing sentence, however, shall preclude licensing of, or

assistance to, developments below or above a wild, scenic or recreational river area or on any stream tributary thereto which will not invade the area or unreasonably diminish the scenic, recreational, and fish and wildlife values present in the area on October 2, 1968. No department or agency of the United States shall recommend authorization of any water resources project that would have a direct and adverse effect on the values for which such river was established, as determined by the Secretary charged with its administration, or request appropriations to begin construction of any such project, whether heretofore or hereafter authorized, without advising the Secretary of the Interior or the Secretary of Agriculture, as the case may be, in writing of its intention so to do at least sixty days in advance, and without specifically reporting to the Congress in writing at the time it makes its recommendation or request in what respect construction of such project would be in conflict with the purposes of this chapter and would affect the component and the values to be protected by it under this chapter.

Construction Projects On Rivers Designated For Potential Addition to System.

(b) The Federal Power Commission shall not license the construction of any dam, water conduit, reservoir, powerhouse, transmission line, or other project works under the Federal Power Act, as amended, on or directly affecting any river which is listed in section 1276(a) of this title, and no department or agency of the United States shall assist by loan, grant, license, or otherwise in the construction of any water resources project that would have a direct and adverse effect on the values for which such river might be designated, as determined by the Secretary responsible for its study or approval—

(i) during the ten-year period following October 2, 1968 or for a three complete fiscal year period following any Act of Congress designating any river for potential addi-

tion to the national wild and scenic rivers system, whichever is later, unless, prior to the expiration of the relevant period, the Secretary of the Interior and, where national forest lands are involved, the Secretary of Agriculture, on the basis of study, determine that such river should not be included in the national wild and scenic rivers system and notify the Committees on Interior and Insular Affairs of the United States Congress, in writing, including a copy of the study upon which the determination was made, at least one hundred and eighty days while Congress is in session prior to publishing notice to that effect in the Federal Register: *Provided*, That if any Act designating any river or rivers for potential addition to the national wild and scenic rivers system provides a period for the study or studies which exceeds such three complete fiscal year period the period provided for in such Act shall be substituted for the three complete fiscal year period in the provisions of this clause (i); and

(ii) during such additional period thereafter as, in the case of any river the report for which is submitted to the President and the Congress, is necessary for congressional consideration thereof or, in the case of any river recommended to the Secretary of the Interior for inclusion in the national wild and scenic rivers system under section 1273(a)(ii) of this title, is necessary for the Secretary's consideration thereof, which additional period, however, shall not exceed three years in the first case and one year in the second.

Nothing contained in the foregoing sentence, however, shall preclude licensing of, or assistance to, developments below or above a potential wild, scenic or recreational river area or on any stream tributary thereto which will not invade the area or diminish the scenic recreational, and fish and wildlife values present in the potential wild, scenic or recreational river area on the date of approval of this chapter. No department or

agency of the United States shall, during the periods hereinbefore specified, recommend authorization of any water resources project on any such river or request appropriations to begin construction of any such project, whether heretofore or hereafter authorized, without advising the Secretary of the Interior and, where national forest lands are involved, the Secretary of Agriculture in writing of its intention so to do at least sixty days in advance of doing so and without specifically reporting to the Congress in writing at the time it makes its recommendation or request in what respect construction of such project would be in conflict with the purposes of this chapter and would affect the component and the values to be protected by it under this chapter.

Activities in Progress Affecting River of System; Notice to Secretary.

(c) The Federal Power Commission and all other Federal agencies shall, promptly upon enactment of this chapter, inform the Secretary of the Interior and, where national forest lands are involved, the Secretary of Agriculture, of any proceedings, studies, or other activities within their jurisdiction which are now in progress and which affect or may affect any of the rivers specified in section 1276(a) of this title. They shall likewise inform him of any such proceedings, studies, or other activities which are hereafter commenced or resumed before they are commenced or resumed.

Grants Under Land and Water Conservation Fund Act of 1965.

(d) Nothing in this section with respect to the making of a loan or grant shall apply to grants made under the Land and Water Conservation Fund Act of 1965.

[Sections 1279-1287 omitted.]

42 U.S.C. sec. 4331

Congressional Declaration of National Environmental Policy.

(a) The Congress, recognizing the profound impact of man's activity on the interrelations of all components of the natural environment, particularly the profound influences of population growth, high-density urbanization, industrial expansion, resource exploitation, and new and expanding technological advances and recognizing further the critical importance of restoring and maintaining environmental quality to the overall welfare and development of man, declares that it is the continuing policy of the Federal Government, in cooperation with State and local governments, and other concerned public and private organizations, to use all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans.

(b) In order to carry out the policy set forth in this chapter, it is the continuing responsibility of the Federal Government to use all practicable means, consistent with other essential considerations of national policy, to improve and coordinate Federal plans, functions, programs, and resources to the end that the Nation may—

(1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;

(2) assure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings;

(3) attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;

(4) preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity and variety of individual choice;

(5) achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and

(6) enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

(c) The Congress recognizes that each person should enjoy a healthful environment and that each person has a responsibility to contribute to the preservation and enhancement of the environment.

42 U.S.C. sec. 4332

Cooperation of Agencies; Reports; Availability of Information, Recommendations; International and National Coordination of Efforts.

The Congress authorizes and directs that, to the fullest extent possible: (1) the policies, regulations, and public laws of the United States shall be interpreted and administered in accordance with the policies set forth in this chapter, and (2) all agencies of the Federal Government shall—

(A) utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decision-making which may have an impact on man's environment;

(B) identify and develop methods and procedures, in consultation with the Council on Environmental Quality established by subchapter II of this chapter, which will insure that presently unquantified environmental amenities and values may be given appropriate consideration in decision-making along with economic and technical considerations;

(C) include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on—

(i) the environmental impact of the proposed action,

(ii) any adverse environmental effects which cannot be avoided should the proposal be implemented,

(iii) alternatives to the proposed action,

(iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and

(v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.

Prior to making any detailed statement, the responsible Federal official shall consult with and obtain the comments of any Federal agency which has jurisdiction by law or special expertise with respect to any environmental impact involved. Copies of such statement and the comments and views of the appropriate Federal, State, and local agencies, which are authorized to develop and enforce environmental standards, shall be made available to the President, the Council on Environmental Quality and to the public as provided by section 552 of Title 5, and shall accompany the proposal through the existing agency review processes;

(D) Any detailed statement required under subparagraph (C) after January 1, 1970, for any major Federal action funded under a program of grants to States shall not be deemed to be legally insufficient solely by reason of having been prepared by a State agency or official, if:

(i) the State agency or official has statewide jurisdiction and has the responsibility for such action,

(ii) the responsible Federal official furnishes guidance and participates in such preparation,

(iii) the responsible Federal official independently

evaluates such statement prior to its approval and adoption, and

(iv) after January 1, 1976, the responsible Federal official provides early notification to, and solicits the views of, any other State or any Federal land management entity of any action or any alternative thereto which may have significant impacts upon such State or affected Federal land management entity and, if there is any disagreement on such impacts, prepares a written assessment of such impacts and views for incorporation into such detailed statement.

The procedures in this subparagraph shall not relieve the Federal official of his responsibilities for the scope, objectivity, and content of the entire statement or of any other responsibility under this chapter; and further, this subparagraph does not affect the legal sufficiency of statements prepared by State agencies with less than statewide jurisdiction.

(E) study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources;

(F) recognize the worldwide and long-range character of environmental problems and, where consistent with the foreign policy of the United States, lend appropriate support to initiatives, resolutions, and programs designed to maximize international cooperation in anticipating and preventing a decline in the quality of mankind's world environment;

(G) make available to States, counties, municipalities, institutions, and individuals, advice and information useful in restoring, maintaining, and enhancing the quality of the environment;

(H) initiate and utilize ecological information in the planning and development of resource-oriented projects; and

(I) assist the Council on Environmental Quality established by subchapter II of this chapter.

STATEMENT OF THE CASE

The Federal Power Commission's Opinions and Orders Nos. 698 and 698-A granted a license to Appalachian Power Company to construct a pumped storage hydroelectric project on the New River in Northwestern North Carolina and Southwestern Virginia.

Appalachian Power Company was granted a two year preliminary permit in March, 1963, by the Commission. In February, 1965, Appalachian applied for a license for the "Blue Ridge Project", much smaller than the project ultimately approved. At hearings conducted in 1967, considerable opposition developed to the project. In response to the objections the Commission staff proposed and Appalachian accepted, the present "Modified Blue Ridge Project", consisting of a lower reservoir of 12,390 acres and an upper reservoir of 26,000 acres. Hearings on the modified project were held in 1969. On Octobr 1, 1969, Examiner (now Administrative Law Judge) Levy issued his initial decision. Oral arguments were held, further briefs were filed, and a supplemental initial decision was issued by Judge Levy on June 21, 1971. Further exceptions were filed, and additional oral arguments were held.

Following publication of a draft environmental impact statement and receipt of comments thereon, the Commission's staff filed its final environmental impact statement on June 18, 1973. The parties were granted an opportunity to cross examine staff witnesses with respect to the final environmental impact statement.

Judge Levy issued a third decision on January 23, 1974. This decision was approved by the Commission for the most part and adopted in the Opinion and Order No. 698. The order required further modification of the project, consisting of a slight reduction in size of the lower reservoir and limiting

the drawdown on the upper reservoir to no more than ten feet.

North Carolina and other parties filed objections to Opinion and Order No. 698. On July 15, 1974, North Carolina filed a petition for rehearing. The petition was denied by Opinion No. 698-A, dated August 12, 1974. North Carolina filed a timely notice of appeal to the United States Court of Appeals for the District of Columbia Circuit.

Opinion No. 698 made the license effective January 2, 1975. On December 13, 1974, North Carolina petitioned the Commission for a stay of the effective date of the license pending the appeal. The petition was denied by the Commission on December 31, 1974. On January 27, 1975, North Carolina petitioned the Commission for a rehearing of this order, which was denied. North Carolina appealed from this order, as well, but the appeal was dismissed as moot by the Court of Appeals.

Appalachian Power Company, the Commonwealth of Virginia, and the State of West Virginia were allowed to intervene by the Court of Appeals.

On December 23, 1974, North Carolina petitioned the Court of Appeals for a stay of the Commission's licensing order pending review. This petition was granted on January 31, 1975.

By application for leave to adduce additional evidence dated September 11, 1975, North Carolina brought to the attention of the Court of Appeals material evidence relating to significant archaeological items in the proposed area of the impoundment, which was allegedly suppressed by Appalachian Power Company.

The Court of Appeals' Opinion and Judgment affirming the grant of the license was entered on March 24, 1976.

Petitioner North Carolina and certain of its citizens (who

are not parties to this proceeding) commenced a civil action in the United States District Court for the Middle District of North Carolina on December 18, 1974, seeking injunctive and declaratory relief against the Federal Power Commission and Appalachian Power Company, to enforce the Wild and Scenic Rivers Act, 16 U.S.C. sec. 1271 et seq. The district court dismissed this action on May 7, 1975, on the theory that the court was without jurisdiction, and that exclusive jurisdiction was possessed by the court of appeals reviewing the Federal Power Commission license. This judgment was appealed to the United States Court of Appeals for the Fourth Circuit, but proceedings in that appeal have been stayed, pending final judgment in the instant case.

REASONS FOR GRANTING THE WRIT:

I. IN VIOLATION OF THE NATIONAL ENVIRONMENTAL POLICY ACT, 42 U.S.C. sec. 4332, THE FEDERAL POWER COMMISSION FAILED TO GIVE ADEQUATE CONSIDERATION TO THE SCENIC RIVER ALTERNATIVE IN ITS ENVIRONMENTAL IMPACT STATEMENT.

Some 70 miles of the 220 mile New River would be inundated by the Modified Blue Ridge Project. (Opinion and Order Granting a License, June 14, 1974, p. 48.) The entire river, particularly that part which would be flooded, possesses characteristics making it ideally suited for classification as a scenic river under the Wild and Scenic Rivers Act, 16 U.S.C. sec. 1271, et seq. Scenic rivers are those "that are free of impoundments with shorelines and watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads," which, "with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, . . ." 16 U.S.C. sec. 1271, 1273(b)(2).

The New River is the oldest river in the Western Hemisphere, and is exceeded in age only by the Nile River among

all the world's rivers. The proposed impoundment would flood the New, below the point where the North Fork and South Fork meet, nestled between the Blue Ridge and the first ridge of the Appalachians. (R. 11,104.) The river, as it meanders through lush bottomlands and among graceful mountains, is a setting of extraordinary natural beauty.

The New River is essentially free from pollution, and as the Commission found, is one of the largest free-flowing, least polluted rivers in the region. (R. 11,118, 11,121.) The Wild and Scenic Rivers Act was passed with a view toward giving "special attention . . . to the dwindling number of American streams that are still in a relatively natural state.' H. Rept. No. 1623, 90th Cong., 2d Sess. (1968), U. S. Cong. and Admin. News 3801, 3802.

The United States Fish and Wildlife Service has identified 23 species of plants and animals in the New River, which are found nowhere else in the world. Eight of these species, including a crayfish, a snail, a plant, and five species of fish, would be adversely affected by the impoundment, and would likely become threatened or endangered. The Secretary of the Interior sought unsuccessfully to delay authorization of construction of the project in order to allow additional study of these species, as required by the Endangered Species Act of 1973, and to permit consideration of scenic river designation, which would have the effect of protecting these species. (Letter from Nathaniel P. Reed, Assistant Secretary for Fish and Wildlife and Parks to Federal Power Commission Chairman John N. Nassikas, dated January 7, 1975, Appendix, infra, pp. 145-148).

Smallmouth bass, and brown, rainbow, and brook trout inhabit this river system. (R. 11,121, 11,452.) Development of the project would result in extensive losses of wildlife population, including deer, fox, turkey, and grouse. (R. 11,122, 11,412.)

Construction of the reservoir would entail the permanent

loss of innumerable prehistoric artifacts and sites, as well as several important historic buildings and sites. These losses are discussed in Part III, infra.

Development of the project would have a profound effect on local cultural values, substituting an intense tourist-oriented recreational development for a stable, traditional society, descended from original settlers, who live in harmony with the land and make their livelihood from the pastures, croplands and woodlands which border the river. (R. 11,232-6, 11,497-527.)

The New River in its natural state provides excellent opportunities for stream fishing and white water-wilderness canoeing, that would be lost if the project were constructed. (R. 11,561-2.)

The Wild and Scenic Rivers Act was passed on October 2, 1968. Pursuant to 16 U.S.C. sec. 1273(a) (ii) the North Carolina General Assembly on March 21, 1974, enacted N.C.G.S. sec. 113A-35.1, designating the New River as a scenic river, and on March 5, 1974, North Carolina Governor James Holshouser made a preliminary application to the Secretary of the Interior for classification of the New River as a scenic river. On March 25, 1974, in a letter to Governor Holshouser, Secretary of the Interior Rogers B. Morton stated that he is "reasonably sure that physically and aesthetically [the New River] qualifies for inclusion in the National [Scenic River] System." (Appendix, infra, pp. 149-151). The Federal Power Commission's Opinion and Order Granting a License for the project was issued on June 14, 1974, some three months later. Also prior to the Commission's licensing order, the United States Senate on May 28, 1974, passed S.2439, designating a portion of the New River where the project would be located as a subject for study for inclusion in the National Wild and Scenic Rivers System. (120 Cong. Rec. 9077.)

In the section of the environmental impact statement dealing with alternatives, the alternative of "no action" is briefly

discussed, and there it is said that no action would "preserve the river for possible selection in the future as a wild or scenic river." (R. 11,168-9.) This is the only reference to scenic river classification set forth in the body of the impact statement. The Environmental Protection Agency in its comments on the environmental impact statement for the project, suggested that the statement should address those features of the New River that would make it desirable for inclusion in the Wild and Scenic Rivers System. (R. 11,425-6.) The response of the Federal Power Commission to this comment was that a description of the New River and its relevant characteristics is given in Section II of the document; no changes were made in that part of the statement dealing with alternatives. (R. 11,188-9.)

The potential environmental and economic benefits that are unique to this alternative require that it be distinguished from the simple "no action" alternative and that it be separately presented. As stated in the Council on Environmental Quality's letter of comment to the Federal Power Commission:

> Although EPA in its comments on the draft to EIS, specifically requested the Commission to discuss features of the New River that would make it desirable as a Wild and Scenic River, Section VI of the Final EIS limits discussion of this important alternative to two sentences. The potential environmental and economic benefits of this alternative should have been presented in sufficient detail to allow comparison with, and subtraction from, the numerous benefits claimed for the proposed action.

The National Environmental Policy Act, 42 U.S.C. sec. 4332(2)(E) requires that agencies "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources; . . ." It is directed in sec. 4332(2)(C)(iii) that the environmental impact statement contain a "detailed statement on . . . alternatives to the proposed action."

The authoritative Guidelines of the Council on Environmental Quality pertaining to the explication of alternatives require a "rigorous exploration and objective evaluation of alternative actions that might avoid, some or all of the adverse environmental effects. . . ." This analysis of each alternative must accompany the proposed action through the review process to prevent premature foreclosure of options that might be less detrimental to the environment. 40 C.F.R. sec. 1500.8(a) (4) (1973). The Federal Power Commission's own regulations require that environmental impact statements "fully deal with alternative courses of action to the proposal and, to the maximum extent practicable, the environmental effects of each alternative." 18 C.F.R. sec. 2.80(b).[1]

The environmental impact statement in this case is manifestly deficient with respect to the scenic river alternative. There is no detailed statement of the possible classificaion and management of the New as a scenic river. It is clear that this alternative has not been studied, developed, and described. The offhand reference in the environmental impact statement to the scenic river alternative certainly does not amount to the rigorous exploration and objective evaluation required by the Council on Environmental Quality Guidelines.[2] Likewise, the required analysis of the costs and impact on the environment of this alternative, are altogether missing. Further, the Commission fell far short of the demands of its own regulations

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1 Further, the Commission's regulations require with respect to alternatives: "[T]he systematic procedure [used to arrive at the proposed action by considering all the alternatives] should include the decision criteria used, the information weighed, and an explanation of the conclusion at each decision point. The decision criteria must show how environmental benefits/costs, even if not quantifiable, are weighed against economic benefits/costs and technology and procedural constraints. All realistic alternatives must be discussed even though they may not be within the jurisdiction of the Commission or the responsibilities and capabilities of the applicants. . . . Describe the timeliness and environmental consequences of each alternative discussed." 18 C.F.R. sec. 2.80, App. A, par. 8.

2 Even without regard to the National Environmental Policy Act, the Commission has a judicially enforceable duty to give full consideration to alternatives under 16 U.S.C. sec. 803(a). *Scenic Hudson Preservation Conference v. Federal Power Commission*, 354 F.2d 608 (2d Cir. 1965).

dealing with the presentation of alternatives in environmental impact statements.

The Court of Appeals failed to discuss this issue in its opinion, although the issue was thoroughly briefed in that court, and treatment of the scenic river alternative in this case appears to be altogether inconsistent with the great weight of authority in the other circuits, e.g., *City of Davis v. Coleman*, 521 F.2d 661 (9th Cir. 1975); *Silva v. Lynn*, 482 F.2d 1282 (1st Cir. 1973); *Environmental Defense Fund v. Froehlke*, 473 F.2d 346 (8th Cir. 1972); and with its own decision in *Natural Resources Defense Council v. Morton*, 458 F.2d 827 (D.C. Cir. 1972). As stated in *Environmental Defense Fund v. Froehlke*, 473 F.2d at 350, "[T]he impact statement should not just list the alternatives to the proposed project but should also include results of the [agency's] own investigation and evaluation of alternatives so that the reasons for the choice of a course of action are clear." This court ought to grant certiorari and reverse, requiring that the Federal Power Commission adhere to the statutory and regulatory requirements for presentation of the scenic river alternative in the environmental impact statement.

II. THIS COURT MUST ENFORCE THE STATUTORY PROHIBITION AGAINST THE FEDERAL POWER COMMISSION'S LICENSING AND OTHERWISE ASSISTING IN THE CONSTRUCTION OF THE MODIFIED BLUE RIDGE PROJECT.

The Wild and Scenic Rivers Act, 16 U.S.C. sec. 1278(a), forbids the Federal Power Commission to license the construction of any dam or other project works, and to assist by license or otherwise in the construction of any water resources project that would adversely affect a designated scenic river. By subsection 1278(b) this prohibition is extended to rivers which have been designated for potential addition to the wild and scenic rivers system.

There are two ways by which rivers can become a part of the wild and scenic rivers system:

1. By Act of Congress enlarging the list contained in 16 U.S.C. sec. 1274.

2. By designation by a state legislature, application by the governor of the state, and finding by the Secretary of the Interior, that the river meets the criteria established by the Act. 16 U.S.C. sec. 1273 (a) (ii).

It is permissible, but not required, that additions to the system be selected from the rivers designated by Congress for potential addition to the system in Section 1276. 16 U.S.C. sec. 1273 (a) (i).

On March 21, 1974, the North Carolina General Assembly enacted N.C.G.S. 113A-35.1, designating the New River as a scenic river. On December 12, 1974, North Carolina Governor James Holshouser made formal application to the Secretary of the Interior pursuant to 16 U.S.C. sec. 1273 (a) (ii) for inclusion of a 26.5 mile part of the river into the wild and scenic rivers system. (Appendix, infra, pp. 152-153). On December 24, 1974, the Secretary of the Interior declared that the application was valid and would be considered by the Department. (Appendix, infra, p. 154).

On April 13, 1976, Secretary of the Interior Thomas S. Kleppe designated the 26.5 mile section of the river as a scenic river and a component of the National Wild and Scenic Rivers System, pursuant to 16 U.S.C. sec. 1273 (a) (ii). (Appendix, infra, pp. 163-164). A large part of the proposed impoundment of the Modified Blue Ridge Project would be on that part of the river designated a scenic river.

The Federal Power Commission in the opinion which is here for review extended the effective date of the license for the Modified Blue Ridge Project to January 2, 1975, pending possible action by the Congress for potential addition of the New River to the Wild and Scenic Rivers System. (Opinion and

Order Granting a License, June 14, 1974, Appendix, infra, p. 126). Denying petitioner's motion for a stay of this order on December 31, 1974, the Commission stated the license would become effective on January 2, 1975, "unless otherwise delayed by judicial review."

On December 23, 1974, before the license became effective, petitioner State of North Carolina, filed a motion in the Court of Appeals for a stay of the effective date of the license, and a stay order was entered by that court on January 31, 1975. The decision of the Court of Appeals affirming the license was announced on March 24, 1976. The Court of Appeals stated that the license was not then effective, but granted authority to the Federal Power Commission to decide whether or not to make the license presently effective. (Appendix, infra, p. 61). A motion for stay of that court's mandate was timely filed. The mandate has been withheld pending determination of the motion, and this petition for writ of certiorari is filed before the mandate of the Court of Appeals has issued. In accordance with Rule 41 of the Rules of Appellate Procedure, the mandate of the Court of Appeals remains stayed until this Court acts on the certiorari petition.[3]

A. *The Secretary of the Interior's Approval of the New River for Inclusion in the National Wild and Scenic Rivers System Renders the License Invalid.*

Following proper designation by the North Carolina General Assembly and application by the Governor of North Carolina, the Secretary of the Interior on April 13, 1976, designated the New River as a scenic river component of the National Wild and Scenic Rivers System, as provided in 16 U.S.C. sec. 1273 (a) (ii). This action by the Secretary of the Interior has the

3 On March 26, 1976, two days after the Court of Appeals opinion was issued, the Federal Power Commission purported in an order to make the license effective immediately. However, because the mandate of the court of appeals had not issued, the Commission was without jurisdiction. *Obey v. McDonald*, 109 U.S. 150 (1883). Petitioner has filed a timely application for rehearing, pursuant to 16 U.S.C. 825*l*, and a motion that the Commission rescind its March 26 order for want of jurisdiction.

effect of prohibiting the Federal Power Commission to license the construction of the dam and reservoir. "The Federal Power Commission shall not license the construction of any dam, water conduit, reservoir, powerhouse, transmission line, or other project works under the Federal Power Act, as amended, on or directly affecting any river . . . which is hereafter designated for inclusion in [the wild and scenic rivers] system, . . ." 16 U.S.C. sec. 1278(a). The Court of Appeals conceded that once the Secretary of the Interior accepted the river for inclusion in the system, it is illegal to create the dam and reservoir. (Appendix, infra, p. 61, n. 2).

B. *While the New River was a State-Nominated Study River, the Federal Power Commission was also Prohibited from Licensing the Project.*

The act of the Governor of North Carolina in making formal application on December 12, 1974, to the Secretary of the Interior to have the New River designated as a scenic river, was the last act necessary to classify the river as a state-designated study river pursuant to 16 U.S.C. sec. 1273(a) (ii).

State-designated study rivers are subject to the same protections against impoundments and other development by 16 U.S.C. sec. 1278(b), to which components of the wild and scenic rivers system are subject by subsection (a) of the same statute. The Court of Appeals incorrectly held that Section 1278(b) was inapplicable to the New River while it was a state-designated study river, and that the protection of this subsection is limited to those rivers designated in 16 U.S.C. sec. 1276(a) by Congress for study as potential wild or scenic rivers.

If this interpretation were correct, then there would be absolutely no reason for inclusion in subsection (b) of the reference to the state-designation method of including a river in the system by the terms of 16 U.S.C. sec. 1273(a) (ii). Yet subsection 1278(b) specifically accords protection to rivers

recommended to the Secretary of the Interior under Section 1273(a) (ii). The proper interpretation of subsection 1278(b) is that it protects state-designated rivers during the study period, although the maximum term for protection is one year instead of three years after the initial ten-year period following October 2, 1968.

The interpretation contended for by petitioner is clear from a close reading of the statute. The first clause of subsection 1278(b) is clearly limited to study rivers designated by Congress in Section 1276(a):

> The Federal Power Commission shall not license the construction of any dam . . . or other project works under the Federal Power Act . . . directly affecting any river which is listed in Section 1276(a).

However, petitioner relies upon the second clause of subsection 1278(b):

> [N]o department or agency of the United States shall assist by loan, grant, license, or *otherwise* in the construction of any water resources project that would have a direct and adverse effect on the values for which such river might be designated . . . *or*, in the case of *any river*, recommended to the Secretary of the Interior for inclusion in the system under section 1273(a) (ii) of this title, . . . [Emphasis supplied].

Clearly the New River has been designated a 1273(a) (ii) study river, and if the FPC allows the license to become effective, it will be wrongfully assisting in the construction of a water resources project during the study period. This provision, not only prohibits the Federal Power Commission from licensing the project, but also bars it from assisting in the development in any way, including allowing the license to become effective, approving plans, authorizing studies.

The use of the term "such river" in the second clause does not refer to the phrase "any river which is listed in Section

1276(a)". The term "such river" can properly refer either to the overall heading of Subsection 1278(b), which is "Construction Projects on Rivers Designated for Potential Addition to System", or alternatively, this term can refer to the phrase in subsection 1278(b)(2) "any river recommended to the Secretary of the Interior for inclusion in the national wild and scenic rivers system under Section 1273(a)(ii) of this title". Moreover the use of the term "any river", without limiting language in paragraph 1278(b)(ii) means that no limitation to Section 1276 Congressional Study Rivers was intended.

This is a case of first impression under the Wild and Scenic Rivers Act. Since subsection 1278(b) is not free from ambiguity, a consideration of legislative intent is appropriate. The legislative history of the act favors the interpretation recommended by petitioner:

> [Subsection 1278(a)] forbids the Federal Power Commission to license any project on or directly affecting any river designated for inclusion in the scenic rivers system. While this prohibition is immediately applicable only to the six scenic rivers named in section 3 of the bill [Section 1274], it will become applicable to other rivers as they are hereafter added to the system by act of Congress or under the provisions of section 2(a)(ii) of the bill [section 1273(a)(ii)]. Subsection (a) also prohibits other Federal departments or agencies from making loans or grants for, and from licensing, water resources projects on such a river if the project would have an adverse effect on its scenic river values. . . . Subsection (b) imposes similar prohibitions and requirements with respect to rivers in the study category for the five years [Amended to ten years by P.L. 93-279, sec. 1(b)(3).] after the date of the act and for an additional period 3 years in the case of study rivers which the Secretary of the Interior or the Secretary of Agriculture recommends be added to the authorized category or for an additional period of 1 year in the case of a State-named river which is recommended to the Secretary of the Interior for inclusion in the system. — *House Report No. 1623, 3 U.S. Code and Admin. News 3811-2812*, 90th Cong. 2d Sess. (1968).[4]

For these reasons, the Court of Appeals incorrectly interpreted subsection 1278(b). The logical reading of this provision, and an interpretation of it in light of its statutory history, compels the holding that the New River was protected against licensing and other activities by the Federal Power Commission for the period specified in the statute, once the governor's application was filed with the Secretary of the Interior on December 12, 1974.

C. Because of the Effective Prohibition of 16 U.S.C. sec. 1278, this Case has become Moot, and the Court should Direct the Dismissal of the Licensing Proceeding Before the Federal Power Commission.

At no time has the license for the Modified Blue Ridge Project become effective. In its June 14, 1974, licensing order, the Federal Power Commission suspended the effective date of the license until January 2, 1975. The Court of Appeals entered its order on January 31, 1975, staying the effective date of the license. The stay order was dissolved and the Federal Power Commission was authorized to "make the license

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4 Subsection 1278(b) as applied to the New River as a state-designated study river, is to be read:

> "no department or agency of the United States [the Federal Power Commission] shall [shall not] assist by loan, grant, license, or otherwise [permit the license to become effective or assist Appalachian Power Company in any other way] in the construction of any water resources project [in the construction of the Blue Ridge Project] that would have a direct and adverse effect on the values for which such river might be designated [that would create an impoundment], as determined by the Secretary responsible for its study or approval—
>
> "(i) during the ten-year period following October 2, 1968 . . . and
>
> "(ii) during such additional period thereafter as, . . . in the case of any river recommended to the Secretary of the Interior for inclusion in the wild and scenic rivers system under section 1273(a)(ii) of this title [in the case of the New River recommended to the Secretary of the Interior for inclusion in the wild and scenic rivers system under section 1273(a)(ii) of this title], is necessary for the Secretary's consideration thereof, which additional period, however, shall not exceed . . . one year. . . ."

effective immediately" in the Court of Appeals March 14, 1976, opinion. However, the mandate of the Court of Appeals has been stayed, the Federal Power Commission remains without jurisdiction, and the license is not in effect.

Under these circumstances the Secretary of the Interior's April 13, 1976, designation of the New River as a scenic river is fully operative. Alternatively, the Governor of North Carolina's application for scenic river status submitted on December 12, 1974, even before the Commission ordered the license effective, antedates the license. Not only is the Federal Power Commission prohibited by 16 U.S.C. Sec. 1278(a) from licensing the project, but it is also prohibited with respect to both included rivers and study rivers by subsections 1278(a) and (b) from assisting by "loan, grant, license, or otherwise in the construction of any water resources project that would have a direct and adverse effect on the values" for which a scenic river has been established or might be designated. This prohibition covers all on-going activities of the Commission in assisting and regulating a licensee with its activities. Even if the initial grant of the license had been effective prior to the time that the river came under the protections of section 1278, the license would be a nullity because continuing activities of the Commission pursuant to the license will be illegal.

The Wild and Scenic Rivers Act, designed to protect the nation's unspoiled and undeveloped waterways, is the counterpart of the Wilderness Act, 16 U.S.C. sec. 1131 et seq., the purpose of which is to protect the nation's primitive land areas. Enforcement of the Wild and Scenic Rivers Act, like the Wilderness Act, requires that the agencies of the government responsible for carrying out the law be given a meaningful opportunity to designate new areas for protection from spoilation. It is so held in *Parker v. United States*, 448 F.2d 793 (10th Cir. 1971), enforcing the Wilderness Act. Pending study and consideration for protected classification, agencies engaged in development of the area should be compelled to stay their

hands. New dams can be built anytime, but ancient rivers can be destroyed only once.

Because the Federal Power Commission has become effectively precluded from granting and making effective a license for the Modified Blue Ridge Project, this proceeding and the proceeding before the Federal Power Commission have become moot. Where either supervening administrative action, *United States v. Anchor Coal Co.*, 279 U.S. 812 (1929), or legislation, *United States v. Alaska Steamship Co.*, 253 U.S. 114 (1920), renders an administrative license or regulation ineffective, there is no case or controversy, and the proceedings must be dismissed on the ground of mootness. The proper procedure is to remand to the agency and direct the dismissal of the proceeding. *United States v. Hamburg-Amerikanische Co.*, 239 U.S. 446 (1916); *United States v. Alaska Steamship Co.*, *supra*. See Note, "Cases Moot on Appeal: A Limit on the Judicial Power," 103 U.Pa. L.Rev. 772 (1955); *DeFunis v. Odegaard*, 416 U.S. 312 (1974). Accordingly, the Court should direct the Commission to dismiss the application for license.

III. THE LICENSE FOR THE MODIFIED BLUE RIDGE PROJECT SHOULD BE SET ASIDE BECAUSE APPALACHIAN POWER COMPANY CAUSED THE FEDERAL POWER COMMISSION TO VIOLATE FEDERAL STATUTES AND REGULATIONS PERTAINING TO HISTORICAL AND ARCHAEOLOGICAL PROPERTIES.

On September 11, 1975, North Carolina filed with the Court of Appeals an application for leave to adduce additional evidence, pursuant to 16 U.S.C. sec. 825*l*(b). This application was made on the basis of a discovery by North Carolina on August 31, 1975, that three archaeological surveys were carried out in the New River valley in the 1960's under contract with Appalachian Power Company, that these surveys disclosed that the area to be flooded is an extremely rich and important archaeological repository, and that Appalachian Power Company suppressed the results of these studies and failed to bring

them to the attention of the Federal Power Commission. This motion was considered by the Court of Appeals at oral argument. The Court of Appeals required only that the Federal Power Commission order Appalachian to provide the necessary time and funding for archaeological research, excavation and salvage as a condition of the licensing. (Appendix, infra, p. 61). Petitioner submits that the response of the Court of Appeals does not cure the clear cut violations of federal statutes and regulations by the Commission as a result of the conduct of Appalachian.

The National Environmental Policy Act requires that the Commission use all practicable means to preserve our historic and cultural heritage. 42 U.S.C. sec. 4331 (b).

By Executive Order No. 11593, 36 F.R. 8921 (May 13, 1971), the Commission is required to institute procedures to insure that its programs "contribute to the preservation and enhancement of non-federally owned sites, structures and objects of historical, architectural or archeaological significance." By its own regulations, 18 C.F.R. sec. 4.40 (k), the Commission requires that the license application contain "a description of any historical or archaeological properties . . . eligible for listing in the National Register which are or may be affected by the project. . . ."

The Commission also has a duty under 16 U.S.C. sec. 469a-1, if it finds or is notified that its federally licensed project "may cause irreparable loss or destruction of significant scientific, prehistorical, historical, or archaeological data," to "notify the Secretary [of the Interior], in writing, and shall provide the Secretary with appropriate information concerning the project, program, or activity." The Commission is given the alternative by the statute either to request the Secretary of the Interior to, or to proceed on its own to, undertake the protection, preservation, and recovery of these items.

An examination of the Commission's Opinion and Order granting a license for the Modified Blue Ridge Project, the

license application, the final environmental impact statement, and the applicant's environmental impact statement discloses that the only attention given to items of archaeological and architectural significance are the mention of the proximity of the Ripshin National Historic Landmark in the impact statement (R. 11,156) and the condition in the license requiring that the licensee consult with the Smithsonian Institution to determine the extent of archaeological surveys and salvage operations that may be necessary, with an amount not to exceed $7500.00 being specified for this purpose (Appendix, infra, p. 133-134).

North Carolina's newly discovered evidence was that there were three archaeological surveys carried out in the New River valley in the 1960's by archaeologists Harvard Ayers and Charlton Holland. (Appendix, infra, pp. 156-218). These surveys were only preliminary field work to determine whether sites relating to activities of prehistoric cultures were present within the project area. From a preliminary analysis of the artifacts, projectile points, and pottery sherds found at these sites, these experts concluded that the New River valley is one of the most important archaeological areas in the Eastern United States. Of particular significance are artifacts found in the project area that make it possible to reconstruct aspects of the "Hopewell Interaction System", a long-distance trade network that operated during the period 300 B.C.—700 A.D., linking societies of the southeastern and midwestern part of the continent by means of the New River, the only waterway which crosses the Appalachian mountain chain from east to west. These cursory examinations of the area disclosed some 65 prehistoric sites, including camps, villages, rockshelters, soapstone quarries, burial grounds, and in addition some 11 fish weirs.

Although both the Ayers and Holland surveys were commissioned by Appalachian Power Company, they were never transmitted to the Federal Power Commission. They are not a part of the FPC record. Paul Johnson, a project engineer for

Appalachian, stated that the surveys were kept secret and were never transmitted to the Commission. (Appendix, infra, p. 158). Because of this deception by Appalachian, the Commission did not comply with 16 U.S.C. sec. 469a-1 (a), and did not give written notification to the Secretary of the Interior about the archaeological treasures which were threatened. The Secretary, like the petitioner, received his information after the Commission made its licensing decision. Nevertheless, the Secretary acted in a timely manner and undertook to evaluate archaeological findings, and to make a cultural research survey on properties of historical and architectural significance in the project area. Copies of this preliminary work of the Department of the Interior are set forth in the Appendix, infra, pp. 218-261.

This work indicates that if Appalachian and the Commission had complied with applicable laws and regulations, an abundance of cultural resources would have been discovered and disclosed in the environmental impact statement. A preliminary reconnaissance survey resulted in the assessment that the entire area to be flooded "appears to qualify for listing in the National Register as a district because of its historic, cultural, and architectural cohesiveness and because of its integrity and lack of intrusions. The area embodies the distinctive characteristics of the late 18th and 19th centuries rural life as exemplified in the architecture, industry and rural isolation. In addition, a number (32) of the buildings appear to qualify individually for listing in the National Register. . . . The Field's Manufacturing Company may be of national significance." (Appendix, infra, p. 249). Field's Manufacturing Company is possibly a unique industrial complex in which some of the old 19th century water-powered machinery remains. Cochran Grist Mill on Dog Creek is a 19th century water-driven mill and has one of about a half a dozen extant Fitz wheels. The site of a spa and hotel at Healing Springs, source of historically important curative mineral waters, would also be in-

undated. Some 18th and early 19th century log houses were also found. (Appendix, infra, pp. 249-252).

North Carolina, following discovery of the surveys suppressed by Appalachian, has initiated the process of nominating at least 18 prehistoric sites within the impoundment area to the National Register of Historic Places. On the basis of more adequate data, it is likely that a number of additional historic sites would be discovered that would qualify for the National Register.

In clear violation of 18 C.F.R. sec. 4.40 (k), Appalachian failed to furnish the Commission a description of historical and archaeological properties eligible for listing in the National Register. Appalachian knew of some of the archaeological properties that would qualify for the Register, but deliberately kept them secret. Appalachian apparently did not undertake even the most cursory examination of historical and architectural properties, required by the same regulation, that necessarily would have disclosed a number of other items that should have been listed in the National Register. It would be manifestly inequitable for Appalachian to profit by its deception with regard to the archaeological findings. Although the Federal Power Commission perhaps cannot be held equally at fault with regard to this suppressed *archaeological* data, the Commission certainly did not fulfill its responsibilities under Executive Order No. 11593, requiring programs for the preservation of obqects of *historical and architectural* significance, by failing to require Appalachian to undertake even a preliminary survey of this material.

Because Appalachian and the Commission failed either to undertake or disclose the studies of archaeological, historical, and architectural data, as required by the statutes and regulations referred to in this part of the petition, the environmental impact statement did not present information or discussion on this important subject. This is contrary to the National Environmental Policy Act requirement that all prac-

ticable means be used to preserve our historic and cultural heritage.

Had all of the relevant information been developed and presented in the impact statement, it is entirely conceivable that the Commission would have been compelled not to grant the license, but to embrace the "no action" alternative as the only rational way of preserving the cultural treasures of the New River valley. The impact statement could not serve its statutory function in this instance, which is to insure that "agency decision maker has before him and takes into proper account all possible approaches to a particular project (including total abandonment of the project) which would alter the environmental impact and the cost-benefit balance." Without all relevant information before the decision maker, it is not "likely that the most intelligent, optimally beneficial decision will ultimately be made." These procedures of NEPA, 42 U.S.C. sec. 4332, are not discretionary, but must be rigorously enforced by reviewing courts. *Calvert Cliffs' Coordinating Committee v. The Atomic Energy Commission*, 449 F.2d 1109, 1114-1115 (D.C. Cir. 1971). Accord, *Environmental Defense Fund v. Froehlke*, 473 F.2d 346 (8th Cir. 1972); *Environmental Defense Fund v. Corps of Engineers*, 492 F.2d 1123 (5th Cir. 1974); *Sierra Club v. Froehlke*, 486 F.2d 946 (7th Cir. 1973).

The Court of Appeals' requirement to give greater attention to the removal of artifacts was not a sufficient remedy. The procedural deficiencies in this instance can be cured only by setting aside the license and ordering new hearings. As correctly determined in *Hudson River Fishermen's Association v. Federal Power Commission*, 498 F.2d 827 (2d Cir. 1974), newly discovered material evidence (even after a license is issued) requires additional hearings and a reconsideration of the license, consistent with this Court's decision in *Udall v. Federal Power Commission*, 387 U.S. 428 (1967).

IV. IN HOLDING THAT THE FEDERAL POWER COMMISSION'S CONSIDERATION OF THE IMPACT

OF ENERGY CONSERVATION MEASURES SUCH AS PEAK LOAD PRICING AND REDUCED DEMAND FACTORS ON THE NEED FOR THE PROJECT WAS ADEQUATE, THE COURT OF APPEALS DISREGARDED THE TEACHING OF THIS COURT IN *UDALL V. FPC*, 387 U.S. 428 (1967), AS WELL AS THE DUTIES IMPOSED UNDER THE NATIONAL ENVIRONMENTAL POLICY ACT.

The Court of Appeals relied on the "rule of reason" doctrine of *Natural Resources Defense Council v. Morton*, 148 U.S. App. D.C. 5, 458 F.2d 827 (1972), to uphold the Federal Power Commission's consideration of energy conservation measures in relation to the need for this project, quoting the FPC's statement that:

> Even if all U. S. consumers were to adopt stringent conservation practices with respect to electricity, the demand for electric power would continue to increase to such an extent that all of the production of Blue Ridge would be essential and, in fact, would meet only a small part of the foreseen future need.

The Court of Appeals also cites the discussion of the FPC in Opinion 698-A, denying petitioner's application for a rehearing, in which the only study the FPC cites is its own 1970 *National Power Survey*.

This holding is in irreconcilable conflict with this Court's decision in *Udall v. Federal Power Commission*, 387 U.S. 428 (1967) in which it is stated that the Federal Power Commission's obligation under section 10(a) of the Federal Power Act, 16 U.S.C. sec. 803(a), is to closely scrutinize changing demand projections for the useful life of a proposed project. This Court specifically rejected the "we can use all we can produce even with conservation" argument advanced by the FPC, stating that "we cannot assume that the Act commands the immediate construction of as many projects as possible." 387 U.S. at 449. The Court of Appeals' implicit approval of

the FPC's refusal to go beyond its 1970 demand study is also in conflict with the Second Circuit's decision in *Hudson River Fishermen's Association v. Federal Power Commission*, 498 F.2d 827, 833 (2d Cir. 1974), wherein the court held the FPC abused its discretion by "donning . . . complete blinders . . . to a new situation" (new hearings compelled because of new evidence of danger to fish through the operation of a licensed project).

The "new situation" on which petitioner seeks FPC's reconsideration is the impact of the "energy crisis" and conservation alternatives on the need for the project. The current "energy crisis" not only produced, beginning in 1974, a pause in the acceleration of demand for electricity, which had been increasing at a steady rate of seven percent per year (Willrich, *The Electric Utility and the Energy Crisis Part II, Pub. Util. Fort.*, January 6, 1975, at 26), but also caused regulatory commissions and economists to examine ways of reducing demand during that period of time when the rate of customer demand is highest—at peak demand, or peak load.

Unrestrained peak-demand has been recognized as a major problem:

> Peak demand results in an inefficient allocation of resources, increased pollution, and economic waste. In the short run, peak demand requires the use of inefficient peak load equipment, and expensive, greater polluting fuels. In the longer run, it requires the plant to expand to meet the peak load. Such expansion uses a great deal of land, to create a facility which sits relatively idle at off-peak times. Furthermore, the increased on-peak customer demand means higher costs to the utility which if not adequately compensated will engender requests for rate increases before the state regulatory commission. — Note, "Lexonomics and the Electrical Utility Industry: In Search of the Optimal Rate Structure", 61 *Ia.L.Rev.* 134, 136 (1975).

Time-differentiated rate design or "peak-load pricing" has been recognized as a potential major energy conservation tool because it creates the possibility of specifically ameliorating peak-load demand:

> The higher cost burden imposed by customer demands for electricity at time of peak load would seem to be amenable to price constraint. That is, the costs to the utility of on-peak demand could be reduced by imposing a rate which is high enough to restrain demand at the system peak. At the very least, the rate imposed for peak electricity consumption should be high enough to compensate the utility for incurring the increased costs of peak production. Although the cost-compensation function of rate design has in the past been given primary focus, both economists and an emerging cadre of regulatory commissions are recognizing that the demand-control function is just as significant. Thus, rate design is beginning to be considered as not simply a method of allocating costs among the customers, and extracting revenues to cover these costs, but also as a device for leveling off peak demand by channelling scarce resources into their most productive uses and by discouraging the wasteful use of electricity. *Id.* at 136-137.

Several state regulatory commissions have already taken steps to implement or study time differentiated rate design as a conservation measure. *Application of Madison Gas and Electric Co.*, Findings of Fact and Order, 2-U-7423 (Pub. Serv. Comm. of Wis., August 8, 1974); *Central Vt. Pub. Serv. Corp.*, Doc. No. 3744, at 27-28 (Vt. Pub. Serv. Bd. Sept. 27, 1974). See Jones, *Judicial Determination of Public Utility Rates: A Critique*, 54 B.U.L. Rev. 873 (1974).

These factors should have been relevant to the consideration of the need for the Blue Ridge Project, which has very little base load capacity and is almost totally intended to fulfill system peak demand. This explains why Blue Ridge was li-

censed although it is a *net user* of electricity, as is shown by the following table taken from the Environmental Impact Statement, p. 17:

	Energy Output MWH	Pumping Requirements—MWH
1975	4,100,000	5,500,000
1980	3,900,000	5,175,000
1985	3,250,000	4,255,000
1990	2,525,000	3,250,000
1995	1,800,000	2,175,000

The facility is thus predicated on the existence of a large differential between peak demand and base demand; during peak demand times, it will be generating electricity, whereas during non-peak demand periods it will be using electricity for pumping requirements. This in itself will lessen the differential between peak and non-peak demand, but only through the device of allowing the utility to become a major consumer—perhaps the major consumer—of its own output.

The Court of Appeals, in using the "rule of reason" doctrine to gloss over these issues and in holding that "Opinion 698-A contains a thorough discussion of the impact of energy conservation on the nation's energy needs in general and on the need for the Blue Ridge Project in particular", misapplied this legal standard. The court committed the fallacy of assuming that a pumped-storage project such as Blue Ridge is equally efficient in meeting both peak-load demand and increase in overall demand. The court fails to see the absurdity of its claim that future increases in overall electrical energy demand can be met by a project that consumes more power than it produces. It is no answer at all to cite the FPC's claim (based on 1970 projections) that even with conservation measures, all the power produced by Blue Ridge would be essential since this fails to distinguish between the very real possibility of an increase in overall demand but a decrease in peak-load demand caused by time-differentiated pricing. This

may totally remove any justification for the Blue Ridge Project. The Court of Appeals' decision on this issue holds the FPC, in effect, to no standard at all in justifying the need for future projects, and this cannot be reconciled with the statutory duties imposed by NEPA or this Court's holding in *Udall*.

The Court of Appeals also justified its holding on this issue on the ground that petitioner did not go into detail about specific conservation measures in its petition for rehearing (although the Court held that the energy conservation measures argument was raised with the degree of specificity necessary to satisfy 16 U.S.C. sec. 825*l*(b)) and in such circumstances a summary discussion by the FPC was sufficient. This is wholly untenable since it in effect puts petitioner and those like it who are attempting to require agencies to consider public interest factors, in the position of having to carry an adversary burden. This is contrary to the idea expressed in *Scenic Hudson Preservation Conference v. Federal Power Commission*, 354 F.2d 608, 614 (2d Cir. 1965), cert. denied sub nom *Consolidated Edison Co. of New York v. Scenic Hudson Preservation Conf.*, 384 U.S. 941 (1966), that the FPC in its licensing process must act as a representative of the public interest; it should not merely assume the role of umpire blandly calling balls and strikes for adversaries appearing before it. Accord: *Udall v. Federal Power Commission, supra.*

V. THE COURT OF APPEALS SHOULD HAVE REVIEWED WHETHER THE FPC VIOLATED THE NATIONAL ENVIRONMENTAL POLICY ACT BY FAILING TO CONSIDER THE DESIGNATION OF THE NEW RIVER AS A "FEDERAL SCENIC RIVER" AS AN ALTERNATIVE TO THE PROJECT SINCE PETITIONER RAISED THIS OBJECTION IN ITS APPLICATION FOR REHEARING BEFORE THE FPC.

The Court of Appeals refused to review the adequacy of the FPC's consideration of the New River as a "federal scenic

river" as an alternative under the National Environmental Policy Act (NEPA), 42 U.S.C. sec. 4332 (2) (E), on the ground that petitioner had not raised this issue in an application for rehearing directed to the FPC as required by section 313(b) of the Federal Power Act, 16 U.S.C. sec. 825*l*(b). Thus the petitioner was completely deprived of a court determination of whether the FPC violated NEPA by attempting to arbitrarily cut off study of the New as a federal scenic river.

Petitioner's Petition for Rehearing of July 12, 1974, specifically objected to the two findings of the FPC in its order granting the license that its procedures were in compliance with NEPA and that the Final Environmental Impact Statement complied with the requirements of NEPA. Under the circumstances, this should be, as a matter of law, sufficient objection to satisfy section 313(b). First, the consideration of alternatives is, of course, an important and specific legal duty imposed upon federal agencies by NEPA. Second, as the FPC's order issuing the license makes perfectly clear, from the time of the issuance of the license, there could be only one other possible use-option for the resources of the New River—federal scenic river status. The FPC in its order of June 14, 1974, took official n ice of possible further study of the New as a scenic river pursuant to legislation which at that time was pending in Congress to designate the New River a subject of study as a potential component of the National Wild and Scenic Rivers System. The only concession the FPC made to this was to delay the effective date of the license granted until January 2, 1975, unless otherwise delayed by judicial review. The Federal Power Commission thus not only gave Congress a deadline, but also completely ignored the possibility of a study of the New triggered by a state application pursuant to 16 U.S.C. sec. 1273(a) (ii), preparation for which was already underway before the FPC's issuance of the license.

Petitioner also raised the scenic river study alternative in its second petition for rehearing filed on January 27, 1975. This

petition was filed in response to the FPC's Order of December 31, 1974, denying the petitioner's motion filed with the FPC on December 16, 1974, seeking a delay in the effective date of the license until the Secretary of the Interior could complete his then begun study of the New as a federal scenic river. In the petition for rehearing of January 27, 1975, petitioner specifically pointed out to the FPC, as it had in its original motion, the duty to suspend the effective date of the license to allow consideration of the scenic river alternative. This second petition for rehearing was brought to the attention of the Court of Appeals. Petitioner first filed a separate petition for review in the Court of Appeals (*State of North Carolina v. Federal Power Commission*, No. 75-411), and then filed a motion for consolidation with the present case. The Court of Appeals not only ignored the second petition for rehearing and the motion for consolidation, but also, dismissed the appeal on the second Federal Power Commission order as moot.

The case relied on by the Court of Appeals, *Federal Power Commission v. Colorado Interstate Gas Co.*, 348 U.S. 492 (1955), is inapposite. The teaching of that case is that the Court of Appeals cannot *sua sponte* consider an objection. In the present case, however, petitioner raised the objection in two petitions for rehearing of two separate orders of the Federal Power Commission.

Moreover, the policy behind section 313(b) dictates that the violation of NEPA issue should have been considered by the Court of Appeals. This Court has stated that policy to be that a party must exhaust his administrative remedies before seeking judicial review and give the FPC an apportunity to correct its errors. *Federal Power Commission v. Colorado Interstate Gas Co., supra,* at 498-499. This policy was fulfilled since FPC's order issuing the license was clear in stating that it would brook no further consideration of the scenic river alternative ["we are persuaded that the Blue Ridge Project is necessary now, and . . . we therefore hope it will not be delayed or foreclosed by Congressional action . . ." (Appendix,

infra, p. 136).] In its second order of December 31, 1974, the FPC also made it abundantly clear that its refusal to consider or wait for study of the New as a scenic river was final. Ignoring the petitioner's concededly valid application for a study of scenic river status for the New filed pursuant to 16 U.S.C. sec. 1273(a)(ii), the FPC stated:

> The 93rd Congress has adjourned without enacting legislation that would foreclose or delay the Blue Ridge Project. Accordingly, the license we granted on June 14, 1974 will become effective on January 2, 1975, unless otherwise delayed by judicial review.

In accord: *Indiana and Michigan Electric Co. v. Federal Power Commission*, 502 F.2d 336, 339-340 (D.C. Cir. 1974), wherein it was held sufficient to overcome the sec. 313(b) bar that the FPC declined to correct its alleged error and expressly defended the validity of its position, although the petition for rehearing did not explicitly raise the point involved.

Moreover, because of the impact on the public interest, it is accepted law that the courts should not seek to narrowly construe the scope of judicial review of FPC licenses. In *Udall v. Federal Power Commission*, 387 U.S. 428, 450 (1967), this Court stated:

> A license under the Act empowers the licensee to construct, for its own use and benefit, hydroelectric projects utilizing the flow of navigable waters and thus, in effect, to appropriate water resources from the public domain. The grant of authority to the Commission to alienate federal water resources does not, of course, turn simply on whether the project will be beneficial to the licensee. Nor is the test solely whether the region will be able to use the additional power. The test is whether the project will be in the public interest. And that determination can be made only after an exploration of all issues relevant to the "public interest," including future power demand and supply, alternate sources of power, the public interest in preserving reaches of wild rivers and wilderness areas,

> the preservation of anadromous fish for commercial and recreational purposes, and the protection of wildlife.

This Court mandated FPC consideration of the public interest in preserving "wild rivers and wilderness areas", although petitioner apparently only made a general objection of the failure of the FPC to consider the issue of federal development of the waterway in question. 387 U.S. at 450-451.

Thus, in summary, although the section 313(b) bar may be rigidly adhered to in the case of a private applicant for a license who is attempting to flyspeck an FPC decision denying a license, this section was never intended to deprive the courts from reviewing the FPC's consideration of public interest factors upon application of a non-economic petitioner as in the present case.

CONCLUSION

For the reasons stated in part III of the petition, this proceeding should be remanded to the Federal Power Commission with the directions that it be dismissed as moot. Otherwise, for the reasons stated in Parts I, II, IV, and V, of the petition, the petition for certiorari should be granted, the Court of Appeals' decision reversed, and this proceeding remanded with directions that the license for the Modified Blue Ridge Project be set aside.

Respectfully submitted,

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APPENDIX

Notice: This opinion is subject to formal revision before publication in the Federal Reporter or U. S. App. D. C. Reports. Users are requested to notify the Clerk of any formal errors in order that corrections may be made before the bound volumes go to press.

United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

No. 74-1941

STATE OF NORTH CAROLINA, Petitioner

v.

FEDERAL POWER COMMISSION, Respondent

APPALACHIAN POWER COMPANY
COMMONWEALTH OF VIRGINIA
STATE OF WEST VIRGINIA, Intervenors

Petition for Review of an Order of the
Federal Power Commission

Argued October 23, 1975

Decided March 24, 1976

Millard R. Rich, Jr., Assistant Attorney General of the State of North Carolina, *Norman B. Smith* and *Thomas J. Schoenbaum*, with whom *Rufus L. Edmisten*, Attorney General of the State of North Carolina, was on the brief for petitioner.

Steven A. Taube, Attorney, Federal Power Commission, with whom *Drexel D. Journey*, General Counsel and *John R. Staffier*, Attorney, Federal Power Commission, were on the brief for respondent. *George W. McHenry, Jr.*, Solicitor, Federal Power Commission at the time the record was filed also entered an appearance for respondent. *Alan Abbot Tuttle*,

Solicitor, Federal Power Commission, entered an appearance for respondent.

William J. Madden, Jr. with whom *Donald K. Danker*, was on the brief for intervenor Appalachian Power Company.

James E. Ryan, Jr., Assistant Attorney General of the Commonwealth of Virginia, for the intervenor, Commonwealth of Virginia. *Anthony F. Troy*, also entered an appearance for intervenor Commonwealth of Virginia.

Frank M. Ellison, Deputy Attorney General for the State of West Virginia was on the brief for intervenor State of West Virginia. *Nicholas W. Johnson*, also entered an appearance for intervenor State of West Virginia.

Edmund I. Adams, filed a brief on behalf of the Committee for New River et al. as *amici curiae* urging reversal.

Dan R. Murray, filed a brief on behalf of the Committee for the Improvement of Alleghany et al. as *amici curiae* urging affirmance.

Frederick E. Miller, Jr., filed a motion on behalf of West Virginia Division of the Izaak Walton League, et al. for leave to file a brief as *amici curiae* and the brief was filed.

Before: Bazelon, *Chief Judge*, Robinson and Robb, *Circuit Judges*

Opinion for the Court filed by *Circuit Judge* Robb.

Robb, *Circuit Judge*: This is a petition by the State of North Carolina to review an order of the Federal Power Commission, granting the Appalachian Power Company a license to build a hydroelectric project on the New River.

The New or New-Kanawha River rises in the Appalachian Mountains of North Carolina and Tennessee and flows north through southwestern Virginia and into West Virginia where it becomes part of the main channel of the Kanawha River. In 1962 Appalachian Power Company (Appalachian) sought

and received permission from the Federal Power Commission to study the river as a potential site for a hydroelectric dam. On the basis of this study, Appalachian in 1965 applied to the FPC for a license to build a dam, to be known as the Blue Ridge Project, on that part of the New River located in North Carolina and Virginia. Hearings on the application commenced in May 1967 and continued for two years.

In October 1969 the Administrative Law Judge (ALJ) rendered a decision recommending the issuance of a license for the Blue Ridge Project. The Project was to include a 650,000 acre-foot water storage capacity, the stored water to be used for downstream water quality control. The states of North Carolina and Virginia generally supported the project, but objected to the ALJ's recommendation that drawdowns up to twelve feet in the level of the reservoir be permitted at certain times of the year. North Carolina also objected to the use of stored water for downstream pollution dilution.

The Commission ordered further hearings before the ALJ on the issues raised by the objections of North Carolina and Virginia. After the hearings the ALJ issued a "Supplemental Initial Decision" recommending the limitation of drawdowns to ten feet and reducing the size of the releases permitted for downstream pollution dilution. North Carolina and Virginia repeated their objections to the size of the permissible drawdowns and North Carolina once again objected to the inclusion of any storage capacity for downstream pollution control. The two states sought and were granted permission to argue before the Commission on their objections to the Supplemental Initial Decision.

While the case was pending before the Commission the decision came down in *Greene County Planning Board v. FPC*, 455 F.2d 412 (2d Cir.), *cert denied*, 409 U.S. 849 (1972). Under that decision the FPC is required by the National Environmental Policy Act of 1970, 42 U.S.C. § 4321 *et seq.*, to prepare an environmental impact statement in advance of

hearings on a proposed project so that the statement may be scrutinized in the course of the hearing. The FPC accordingly remanded the Blue Ridge proposal to the ALJ for further hearings, to afford an opportunity for cross-examination on the impact statement. Prior to these hearings the State of North Carolina withdrew its support of the Blue Ridge Project, citing potential adverse impact upon the land and way of life of the people in the area near the proposed dam.

North Carolina participated in the hearings on the impact statement and filed briefs which concerned themselves primarily with the adequacy of the statement's discussion of the social and economic effects of the project. In January 1974 the ALJ issued a decision finding the impact statement adequate and recommending the issuance of the license. On June 14, 1974 the FPC, in its Opinion No. 698, approved the Final Decision of the ALJ and issued a license for the Blue Ridge Project. The FPC postponed the effective date of the license in view of pending legislation which would have designated the New River as a wild and scenic river under the Wild and Scenic Rivers Act, 16 U.S.C. § 1271 *et seq.* The proposed legislation was not enacted by Congress.

On July 15, 1974 North Carolina and others petitioned the FPC for a rehearing on its opinion granting the license, citing several alleged errors in the opinion and in the FPC's consideration of the Project. The FPC on August 12, 1974 denied the petition for rehearing. North Carolina then filed this petition for review.

Section 313(b) of the Federal Power Act, 16 U.S.C. § 825*l*(b), provides that any party aggrieved by an order of the FPC may seek review in this court. The statute further provides, however, that no objection to an order of the FPC may be considered on review unless the same objection was first raised in an application for rehearing directed to the FPC. As the Supreme Court has stated, it is the purpose of this provision to give the FPC notice of its alleged errors so

that it may have the opportunity to correct them. *FPC v. Colorado Interstate Gas Co.*, 348 U.S. 492, 500 (1955).

In its petition for review in this court North Carolina raised the following issues:

(1) whether the FPC failed to consider the alternative of energy conservation;

(2) whether the FPC had authorized inclusion in the project of water storage capacity for pollution dilution;

(3) whether the FPC failed to analyze adequately certain costs of the Project;

(4) whether the FPC failed to consider as an alternative to the Project the possibility that the river should be made a component of the National Wild and Scenic Rivers System.

North Carolina suggests that each of these arguments was raised with the necessary specificity in the petitions for rehearing directed to the FPC. We disagree.

The specific issue of water storage for pollution dilution is not foreshadowed by the evidentiary objection to Finding of Fact 18 which states that the Project will provide benefits such as flood control, low flow augmentation, recreational development, fishing opportunities and water supply. Neither are the references to the petitions of Alleghany and Ashe Counties sufficient. Those petitions only question whether the original smaller Project should have been reconsidered. No reference is made in them to the allegedly illegal inclusion of water storage for pollution dilution.

Similarly, Paragraph 4 of North Carolina's petition for rehearing simply attacks, in general terms, five of the Commission's findings of fact. These findings state that the Project will provide desirable public benefits, will enhance the aesthetic values of the area and that the Commission complied with

the provisions of the National Environmental Policy Act in the licensing proceedings. The National Wild and Scenic Rivers Act is not mentioned. Neither is the Act mentioned in the petition of Ashe and Alleghany Counties. The portions of the petition cited to us by North Carolina, while containing a reference to the pendency in Congress of legislation pursuant to the Act, do not state that the Commission failed to consider designation of the New River as an alternative to the Project.

North Carolina contends that three of the specific issues raised in its argument concerning consideration of costs and benefits of the Project were also raised in the petitions for rehearing. These issues are (1) the purported consideration of the gross benefits rather than the net benefits of the Project; (2) the loss of natural stream flow due to the Project; and (3) the cost of electricity to pump water from the lower reservoir to the upper reservoir. None of these issues was specifically discussed in the petitions for rehearing.

North Carolina purports to have raised the "gross benefits" issue in portions of its petition that deal with whether the Project will be beneficial on balance. The cited part of the Ashe and Alleghany Counties petition contains only a general discussion of the need for the Project. The "loss of natural stream flow" issue is said to have been raised in the same parts of the petitions in which the Wild and Scenic River alternative was raised. A reading of those passages referred to shows that no such specific matter is raised. The same is true of North Carolina's argument concerning the cost of water pumping. This issue is said to be subsumed in the discussion of energy conservation as an alternative to the Project, but it is not mentioned there. We think that section 313(b) of the Federal Power Act requires something more concrete and specific than the vague references cited to us by North Carolina.

We think two issues were raised in the petitions for rehearing with the degree of specificity necessary to call the FPC's attention to them or "stimulate [its] consideration of" them.

Indiana & Michigan Electric Co. v. FPC, 163 U.S. App. D.C. 334, 337, 502 F.2d 336, 339 (1974), *cert. denied*, 420 U.S. 946 (1975). The two issues are (1) the FPC's alleged failure to consider energy conservation measures as an alternative to the Project and (2) the FPC's alleged failure to give adequate consideration to one of the social costs of the Project, specifically the relocation of persons displaced by the Project. We think however that North Carolina's contention that these issues were not adequately considered by the Commission is without merit.

Section 102(2)(D) of the National Environmental Policy Act of 1970, 42 U.S.C. § 4332(2)(D) requires all agencies of the federal government to "study, develop and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources." North Carolina argues that the FPC failed to comply with this requirement of the Act in that it failed to consider whether the adoption of energy conservation measures such as reduced consumption and "peak pricing" would make unnecessary the power to be supplied by the Blue Ridge Project. The argument does not persuade us. The Commission staff's final environmental impact statement makes it clear that the FPC did consider this alternative. The statement notes:

> Even if all U. S. consumers were to adopt stringent conservation practices with respect to electricity, the demand for electric power would continue to increase to such an extent that all of the production of Blue Ridge would be essential and, in fact, would meet only a small part of the foreseen future need.

The Commission again discusses the matter of energy conservation in its Opinion No. 698-A, denying North Carolina's application for rehearing. Opinion No. 698-A contains a thorough discussion of the impact of energy conservation on the nation's energy needs in general and on the need for the Blue

Ridge Project in particular. The discussion makes it clear that the consideration of the energy conservation alternative is sufficient under the standard established by this court in *Natural Resources Defense Council v. Morton*, 148 U.S. App. D.C. 5, 458 F.2d 827 (1972):

> We reiterate that the discussion of environmental effects of alternatives need not be exhaustive. What is required is information sufficient to permit a reasoned choice of alternatives so far as environmental aspects are concerned.
>
> * * * * *
>
> . . . the requirement in NEPA of discussion as to reasonable alternatives does not require "crystal ball" inquiry. . . . *The Statute must be construed in the light of reason* if it is not to demand what is, fairly speaking, not meaningfully possible, given the obvious, that the resources of energy and research—and time—available to meet the Nation's needs are not infinite. [Emphasis supplied]. *Id.* at 14-15, 458 F.2d at 836-37.

A relatively brief discussion of an issue might not always be sufficient to satisfy the "rule of reason" test laid down in *Natural Resources Defense Council v. Morton, supra*. In the present case, however, the parties raised only the most generalized concern about "conservation of energy" in their petitions for rehearing and never specifically brought such matters as "peak load pricing" to the Commission's attention. In these circumstances the discussion of these issues by the Commission is sufficient.

North Carolina's second argument is that the FPC's analysis of the costs and benefits of the Blue Ridge Project is inadequate to show that the benefits exceed the costs. The specific issue that North Carolina is permitted by section 313(b) of the Federal Power Act, 16 U.S.C. § 825*l*(b), to raise in this regard relates to the relocation of persons who will be dispossessed by the creation of the reservoirs adjacent to the Blue

Ridge Dam. North Carolina argues that the proviso attached to Appalachian's license by the Commission does not guarantee that replacement housing will be provided.

The question here is not whether the FPC may require guarantees of replacement housing; rather the question is whether the FPC adequately considered the projected social cost of the project. We think it clear that the Commission did consider it thoroughly. The Final Environmental Impact Statement contains precise data concerning the numbers of persons to be dispossessed; and recognizing the problem the FPC specifically provided in the license that Appalachian would carry the burden of assisting in relocation under the continuing scrutiny of the FPC and pursuant to the recommendations of the Department of Housing and Urban Development. Thus the license provides:

> *Article 55.* The License shall establish a relocation advisory service and give reasonable financial assistance to assist in the relocation of persons now located in the project area and to minimize any hardship to such persons arsing from such relocation and, within six months of the effective date of the license and annually thereafter during the construction of the project, shall report to the Commission on the success of its efforts. The provision of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 shall be used as a guide to implement this article.

The Wild and Scenic Rivers Act provides two methods by which a river may be included in the national wild and scenic rivers system: (1) by Act of Congress, section 2(a)(i), 16 U.S.C. § 1273(a)(i) and (2) by designation by the legislature of the state through which the river flows followed by a determination by the Secretary of the Interior, upon application of the governor of the state, that the river meets the criteria established by the Act, Section 2(a)(ii), 16 U.S.C. § 1273(a)(ii). Rivers designated by the state are to be administered

by the state without expense to the United States. In section 3, 16 U.S.C. § 1274, Congress itself designates ten rivers as components of the system; and in section 5(a), 16 U.S.C. § 1276(a), Congress designates certain additional rivers "for potential addition" to the system. Section 4, 16 U.S.C. § 1275, directs the Secretary to study and the President to submit to the Congress no later than October 2, 1978 reports on the suitability for addition to the system of the rivers designated in section 1276(a) as potential additions.

Pursuant to 16 U.S.C. § 1273(a)(ii), following designation of the New River by the state legislature, the Governor of North Carolina recommended to the Secretary of the Interior on December 12, 1974 that the river be included in the national wild and scenic rivers system. The petitioners contend that section 1278(b) of the Act prohibits the Commission from licensing the New Blue Ridge Project while the state's recommendation is being considered by the Secretary of the Interior.[1] We are unable to agree.

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[1]The pertinent part of 16 U.S.C. §1278(b) is:

§ 1278. Restrictions on water resources projects.

* * * * *

(b) Construction projects on rivers designated for potential addition to the system.

The Federal Power Commission shall not license the construction of any dam, water conduit, reservoir, powerhouse, transmission line, or other project works under the Federal Power Act, as amended, on or directly affecting any river which is listed in section 1276(a) of this title, and no department or agency of the United States shall assist by loan, grant, license, or otherwise in the construction of any water resources project that would have a direct and adverse effect on the values for which such river might be designated, as determined by the Secretary responsible for its study or approval—

(i) during the ten-year period following October 2, 1968, or for a three complete fiscal year period following any Act of Congress designating any river for potential addition to the national wild and scenic rivers system, whichever is later, unless, prior to the expiration of the relevant period, the Secretary of the Interior and, where national forest lands are involved, the Secretary of Agriculture, on the basis of study, determine that such river should not be included in the national wild and scenic rivers system and notify the Committees on Interior and Insular Affairs of the United States Congress, in writing, including a copy of the study upon which the determination was made, at least one hundred and eighty days while Congress is in session prior to publishing notice to that effect in the Federal Register: *Provided*, That if any Act designating any river or rivers for potential addition to the national

The pertinent part of section 1278(b), i.e. section 1278(b)(i) and (b)(ii) comprises one sentence of 384 words. The syntax is poor, the language is confusing and at first glance may seem inexplicable. Careful analysis however discloses the sense of the verbiage. The entire sentence relates to those rivers "listed in section 1276(a)" as potential additions to the system. For a ten-year period following October 2, 1968 the Federal Power Commission is forbidden to license the construction of any dam on such a designated river unless the Secretary has determined that it should not be included in the system. If the Secretary reports to the Congress his recommendations concerning any river designated as a potential addition to the system an additional period of three years, beyond that specified, is allowed for congressional consideration of the report. If a state, proceeding under section 1273(a)(ii), recommends to the Secretary that any river designated as a potential addition by section 1276(a) be included then the additional period allowed for action by the Secretary is one year.

The New River is not one of those designated by Congress in 16 U.S.C. § 1274 as a component of the wild and scenic rivers system. That section therefore offers no comfort to the petitioners. Moreover the New River is not designated by 16 U.S.C. § 1276(a) as a potential addition to the system. Since in our view section 1278(b) applies to only those rivers designated by section 1276(a) it follows that section 1278(b) does

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wild and scenic rivers system provides a period for the study or studies which exceeds such three complete fiscal year period the period provided for in such Act shall be substituted for the three complete fiscal year period in the provisions of this clause (i); and

(ii) during such additional period thereafter as, in the case of any river the report for which is submitted to the President and the Congress, is necessary for congressional consideration thereof or, in the case of any river recommended to the Secretary of the Interior for inclusion in the national wild and scenic rivers system under section 1273(a)(ii) of this title, is necessary for the Secretary's consideration thereof, which additional period, however, shall not exceed three years in the first case and one year in the second.

* * * * *

(As amended Pub. L. 93-279, § 1(b)(3),(4), May 10, 1974, 88 Stat. 123; Pub. L. 93-621, § 1(c), Jan. 3, 1975, 88 Stat. 2096.)

not prohibit the licensing of the New River project.[2]

After the briefs were filed in this case North Carolina filed in this court a motion for leave to adduce additional evidence. The motion represents that information to which North Carolina and the FPC were previously denied access, but which was in the possession of Appalachian, indicates that the New River Valley is an archaeological site of great significance. North Carolina urges that complete research, excavation and salvage work should be undertaken and completed prior to the inundation of the valley. Appalachian apparently concedes that two or three years work will be required to complete the archaeological excavation and salvage but states that sufficient time will be available to complete the work if the license is made effective immediately. Accordingly, whether it chooses to make the license effective immediately or not, the FPC will modify the license to require that Appalachian provide the necessary time and funding for complete research, excavation and salvage as a condition of licensing. As so modified, the order of the FPC is affirmed. The stay order by this court dated January 31, 1975 is vacated.

Affirmed.

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[2] Our conclusion that Congress intended the protections of section 1278(b) to apply only to those rivers listed in section 1276(a) finds support in the legislative history of the National Wild and Scenic Rivers Act. In the original House version of the Act it was contemplated that either a state or the Secretary of the Interior could conduct the required study of a river designated for potential inclusion in the national wild and scenic rivers system. Section 1278(b) protection against "adverse Federal agency action" was intended to apply to "the rivers listed in section [1276] which are being studied by a State" to the same extent as those being studied by the Secretary. H.R. Rep. No. 1623, 90th Cong., 2d Sess. 8 (1968). While the provision allowing states to conduct studies on their own was modified in conference, H.R. Rep. No. 1917, 90th Cong., 2d Sess. 16 (1968) (conference), this is another indication Congress intended section 1278(b) to apply only to rivers listed in section 1276(a). Of course, states may recommend rivers other than those listed in section 1276(a) for inclusion pursuant to section 1273(a)(ii). They are protected under section 1278(a), but only *after* being accepted by the Secretary.

UNITED STATES OF AMERICA
FEDERAL POWER COMMISSION

OPINION NO. 698

Appalachian Power Company) Project No. 2317

OPINION AND ORDER GRANTING A LICENSE FOR THE MODIFIED BLUE RIDGE PROJECT

Issued: June 14, 1974

UNITED STATES OF AMERICA
FEDERAL POWER COMMISSION

Appalachian Power Company) Project No. 2317

OPINION NO. 698

APPEARANCES

A. Joseph Dowd, Thomas M. Debevoise, and *William J. Madden, Jr.,* for Appalachian Power Company.

R. F. Crouse and *Edmund I. Adams* for Ashe and Alleghany Counties. North Carolina.

William T. Crisp for North Carolina Electric Membership Corporation, Blue Ridge Electric Membership Corporation, and Harrison (County) Rural Electric Association.

Ted G. West for Blue Ridge Electric Membership Corporation.

Philip P. Ardery and *James A. H. Ferguson* for the City of Danville, Virginia.

D. Gardiner Tyler for the Department of Conservation and Economic Development, Commonwealth of Virginia.

William C. Wise for Intervening Cooperatives.

Lynwood H. Wilson for Old Dominion Electric Cooperative and Mechlenburg Electric Cooperative.

Curtis H. Bell for the Secretary of the Interior.

Joseph Swidler and *William Harkaway* for Sprague Electric Co.

George A. Goodwyn, Millard R. Rich, Jr., Robert Morgan, and *Theodore S. Farfaglia* for the State of North Carolina.

Willard W. Gatchell and *Howard E. Wahrenbrock* for Washington Mills Company.

Kenwood K. Harris for the Conservation Council of Virginia, Inc.

Paul X. Bolt and *Lorne R. Campbell* for Grayson County, Virginia.

Arnold L. Young for the Alleghany Farm Bureau and North Carolina Farm Bureau.

Chauncey H. Browning, Jr. and *Frank M. Ellison* for the State of West Virginia.

Paul J. Kaufman for the Congress for Appalachian Development and the Appalachian Research and Defense Fund.

Andrew P. Miller, Francis C. Lee, James E. Ryan, Jr., and *D. Gardiner Tyler* for the Commonwealth of Virginia.

Edward Berlin for the Conservation Council of Virginia, Inc., the West Virginia Natural Resources Council, Inc., and the Izaak Walton League.

Michael B. Gross and *Robert V. Zener* for the Environmental Protection Agency.

Gerald L. Chafin for the Izaak Walton League of America, West Virginia Division.

Ira S. Latimer, Jr., for the West Virginia Department of Natural Resources.

Gordon Ebersole for the Congress of Appalachian Development.

Sidney Gambill for the Upper New River Development Association.

Raymond E. Hagenlock, Thomas E. Nelson, Sheldon L. Bierman, Daniel P. Behuniak, and *Philip R. Telleen* for the Staff of the Federal Power Commission

UNITED STATES OF AMERICA
FEDERAL POWER COMMISSION

HISTORIC LANDMARKS; LICENSE (Major); NAVIGABLE WATERS; PRESERVATION AND ENHANCEMENT OF SCENIC ENVIRONMENT; PRIMARY TRANSMISSION LINE; PUBLIC INTEREST; PUBLIC RECREATION; RELIABILITY; WATER QUALITY.

Before Commissioners:

John N. Nassikas, Chairman;
Albert B. Brooke, Jr., Rush Moody, Jr.,
William L. Springer, and Don S. Smith.

Appalachian Power Company) Project No. 2317

OPINION NO. 698

OPINION AND ORDER GRANTING A LICENSE FOR THE MODIFIED BLUE RIDGE PROJECT

(Issued June 14, 1974)

BROOKE, Commissioner:

The Appalachian Power Company (Appalachian) seeks a license to build a combined conventional and pumped storage hydroelectric project in the Blue Ridge Mountains of southwestern Virginia and northwestern North Carolina. By this Opinion and Order, we grant the license for the project.

We do so following a proceeding that we regard as being as noteworthy for its thoroughness as for its duration. A dozen years ago the Appalachian Power Company first indicated officially to us its interest in a Blue Ridge project. On June 20, 1962, Appalachian applied for a preliminary permit to allow it to investigate locating a possible project in that area. Subsequently, the preliminary permit was granted, and on February 27, 1965, an application for a license was filed. In the years since, a record of mountainous proportions has been built. The Presiding Administrative Law Judge has conducted many weeks of hearings and has issued three lengthy decisions. Scores of experts have contributed testimony, and scores of others—landowners and private citizens in the affected areas and public officials—have been heard in public sessions before the presiding officer or in oral argument before us. We have permitted all interventions, although some were exceedingly tardy. The Commission itself examined the site, on foot and by automobile to the extent the terrain permitted, and otherwise by air. Oral argument has twice been heard.

In short, we have before us a very extensive record, and that record in our judgment is sufficient to permit our informed judgment on all of the many issues presented by this case.

We are therefore prepared to act, and to act now. As we shall explain, however, we shall delay the effective date of the license herein granted until January 2, 1975, so that the 93d Congress will have an opportunity to act upon legislation that would affect the project.

We herein grant a license to the Appalachian Power Company to construct a combined conventional and pumped storage hydroelectric project on the New River near Galax and Independence, Virginia, and Sparta, North Carolina. The two project reservoirs will lie in Grayson County, Virginia, and in Ashe and Alleghany Counties, North Carolina. The latest estimate of record shows that the combination project, known as the Modified Blue Ridge Project, will cost approximately $430 million. It will have an installed capacity of 1,800,000 kilowatts. Its purposes, in addition to the production of power, are several. As will appear below, the project will provide needed flood control capacity; it will markedly enhance the recreation potential of a portion of Appalachia, and in so doing will be of benefit to the people in the crowded metropolitan areas of much of the eastern United States; and it will encourage economic development in the immediate area surrounding the project, as well as provide water benefits downstream where New River flows are periodically in need of augmentation.

In light of these several results, we find that the Modified Blue Ridge Project meets the requirements of section 10(a) of the Federal Power Act. In the language of that section, "the project . . . in the judgment of the Commission will be best adapted to a comprehensive plan for improving and developing a waterway or waterways . . .". We also conclude that the environmental consequences of this project will be both profound and, on balance, beneficial. Inevitably so massive a project as this will effect very substantial environmental changes. These changes have been examined in this proceeding in great detail. In our judgment, the environmental changes associated with the project herein authorized will promote the "productive and enjoyable harmony between man and his

environment" that the National Environmental Policy Act articulates as a national goal. We find the project to be in the public interest.

In the discussion that follows, we shall undertake first to set forth some of the history of this proceeding (1), and then to describe the Modified Blue Ridge Project that we herein license (2). Thereafter we will discuss (3) the power benefits of the project; (4) the recreation benefits that will be associated with, and to some extent required, of the project, together with the related questions of shoreline control and drawdowns; (5) the flood control benefits; (6) the questions of water quality control and low flow augmentation; (7) the issue of Federal development under section 7(b) of the Federal Power Act; (8) the matter of State certification for water discharges; (9) the question concerning the location of transmission lines; and (10) the questions raised by the City of Danville, Virginia, concerning its needs for Blue Ridge project power and concerning Appalachian's alleged anti-competitive behavior. We will then turn to a discussion of environmental considerations, both procedural and substantive (11). Thereafter we will consider certain provisions of the license (12), and we will finally dispose of a miscellany of remaining exceptions (13). The license itself commences at page 61.

(1) HISTORY OF THE PROCEEDING

In June, 1962, the Appalachian Power Company made application to us for a two-year preliminary permit under section 4(f) of the Federal Power Act, a section which has the effect of affording to an applicant a priority for a license during the time its investigations of a possible project are performed. We granted the preliminary permit to our order of March 11, 1963, 29 FPC 445. In that order we stated that the portion of the New-Kanawha River proposed to be affected is a navigable water of the United States. We also explored and disposed of the question whether the proposed site had been authorized and, in effect, pre-empted for Federal development. As to the later question, our order acknowledged that the Appalachian project would occupy the site of the proposed Federal Moores Ferry Project, such Moores Ferry Project being a part of a general, comprehensive plan for flood control and other purposes in the Ohio River Basin. But we concluded that the Moores Ferry Project had not been selected and approved for development by the United States Government, and thus that our licensing jurisdiction continues.

Two years thereafter, on February 27, 1965, Appalachian applied for a license for the Blue Ridge Project. The project then applied for was substantially smaller than the Modified Project that we herein authorize. The 1965 application concerned a project estimated to cost $140 million; its installed capacity would have been 980,000 kilowatts, rather than 1,800,000 kilowatts; its lower reservoir would have covered 2,850 acres, rather than the 12,390 acres of the Modified Project; and its upper reservoir would have covered 16,600 acres, rather than the 26,000 acres now foreseen. The application also proposed the installation by Appalachian of power generating facilities at the existing Bluestone Reservoir, a project of the Army Corps of Engineers lying 140 miles downstream from the proposed lower reservoir. By order of March 8, 1966, the Commission dismissed that portion of Appalachian's application, holding that the Congress had earlier authorized Federal installation of power-generating facilities at Bluestone. Although such installation was later deferred, we held that the authorization remains. 35 FPC 359; rehearing denied, 35 FPC 669.

The project originally applied for would have been operated to provide 25,000 acre-feet of storage for low-flow augmentation. In a petition to intervene filed in June, 1966 (and granted in July, 1966), the Secretary of the Interior contended that the project would require extensive modification if it were to meet the section 10(a) requirement for being "best adapted to a comprehensive plan". Interior argued that in order to meet the need for water quality control to alleviate down-

stream pollution, 500,000 acre-feet of storage, not 25,000 acre-feet, were required.

Hearings commenced in May, 1967, and continued in October and November of that year. By that time the intervenors, in addition to Interior, included the States of Virginia and North Carolina and a group of REA cooperatives. (Two private companies were also granted intervention, but each has ceased to be an active participant. The two companies are the Sprague Electric Company and the Washington Mills Company, each of whom maintains facilities on the New River that they believed might suffer damage from the Appalachian project, but each later came into agreement with Appalachian as to protective measures.)

During the course of the 1967 hearings, it became clear that if the project were operated so as to fulfill the water quality control function then advocated by Interior, the recreational and aesthetic values of the project would be greatly diminished. Drawdowns from the upper reservoir, foreseen as the principal recreation area, of over 30 feet during the summer recreation months, and over 40 feet at other times, would then have occurred. The States understandably objected to this destruction of some of the project's principal values. Thereupon, toward the end of the 1967 hearings, the Commission Staff suggested the modified plan, whereby the smaller reservoirs of the original Blue Ridge Project were replaced by two larger reservoirs. For the next several months Appalachian studied all aspects of this alternative, and it ultimately concluded that a Modified Blue Ridge Project was feasible. Appalachian applied for the Modified Project in June, 1968. That Modified Project, with additional changes we find necessary, is the project licensed herein.

Hearings on the Modified Project were held in February, 1969. Thereafter we permitted intervention by the City of Danville, Virginia, which sought, among other things, an ownership interest in the project. Further hearings were held in June

and July, 1969, on the matters raised by Danville, and there followed on October 1, 1969, the Examiner's Initial Decision. */

In that 1969 decision, Presiding Judge William C. Levy concluded that a license should be granted to Appalachian for the Modified Project. That project, to be operated to provide initially 400,000 and later 650,000 acre-feet of water quality storage, and with its flood control, recreation, aesthetic and power benefits, would, he said, represent the highest and best use of the river reach. He found that the requirements of section 10(a) of the Federal Power Act were met. Exceptions to the Initial Decision thereafter filed indicated that in large measure the Applicant, Interior and our Staff agreed. The States of Virginia and North Carolina did not, objecting on a number of grounds but principally on matters concerning water quality control and drawdowns. Danville took exception to all of the Presiding Judge's conclusions relating to its concerns.

We granted oral argument, which was heard on February 2, 1970. During the oral argument the Attorney General of West Virginia appeared and objected strenuously to the adverse environmental effects the project allegedly would have upon downstream reaches of the New River in West Virginia. He then petitioned to intervene out of time, and we later granted the petition. We also ordered the record reopened to permit further testimony on "the effects of the Modified Blue Ridge Project upon recreational aspects of the New River in West Virginia". Further hearings then occurred—in Beckley, West Virginia, in July and in Washington in December, 1970. Further interventions were also accorded to all who petitioned: the Conservation Council of Virginia, the West Virginia Natural Resources Council, the Izaak Walton League (West Virginia Division), the Congress for Appalachian Development,

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*/ The title "Examiner" was changed to "Administrative Law Judge" on September 1, 1972. In general in this Opinion, the current terminology (i.e., "Presiding Administrative Law Judge", or "Presiding Judge", or simply "Judge"), will be used, whether the event in question preceded or succeeded September 1, 1972.

the Appalachian Research and Defense Fund, Inc., Grayson County (Virginia), Ashe and Alleghany Counties (North Carolina), the Alleghany Farm Bureau and the North Carolina Farm Bureau. Although it has not petitioned to intervene, the Environmental Protection Agency (EPA) has been accorded the status of an intervenor, inasmuch as the functions of the Federal Water Quality Administration, formerly within the responsibility of the Interior Department, are now within the jurisdiction of EPA. Following the conclusion of hearings in December, 1970, briefs and environmental statements were filed and on June 21, 1971, Judge Levy's Supplemental Initial Decision was issued.

The Supplemental Initial Decision did not differ in many particulars from its predecessor. The Presiding Judge stated,

> The record in this remanded hearing reinforces the earlier conclusion that the Modified Blue Ridge Project, which emerged after six years of studies, investigations, and hearings, represents the "maximum utilization of the applicable reach of the New River sub-basin above Galax, Virginia with optimum project benefits." . . . The proposed project provides comprehensive development of the river reach with the maximum public benefits that can be supported within the limits of economic feasibility, including flood control, water quality storage, recreation, pollution control, esthetics, fishery and power. (p. 5)

The Judge found that the environmental impact would be, on balance, beneficial. But he did modify his earlier decision in two important particulars: he lessened the downstream release rate, and he lowered the limit on maximum drawdown of the upper reservoir in 1985 and thereafter. The Judge's proposed downstream release rate in his October, 1969 decision had been 4,000 cfs during July and 5,000 cfs at all other times; in June, 1971, as urged by the Staff, he adopted 3,000 cfs for April through October, and 5,000 cfs at all other times. As for the upper reservoir drawdown, in his 1969 decision the Judge had adopted

10 feet from June 1 through Labor Day and 12 feet at all other times; in his 1971 decision he proposed 10 feet at all times after 1985. The Commonwealth of Virginia had earlier urged a limit of 10 feet at all times.

The exceptions filed in August, 1971, indicated that Appalachian and Interior continued generally to support the Presiding Judge, and our Staff in most major respects did so as well. The three intervening States of Virginia, North Carolina and West Virginia continued to express misgivings, particularly in the area of water quality control, and on this subject they were joined by the conservation groups that have intervened (the Conservation Council of Virginia, the West Virginia Natural Resources Council and the West Virginia Division of the Izaak Walton League), by the intervening counties (Ashe, Alleghany and Grayson), and by the two Farm Bureaus (Alleghany and North Carolina). The Congress for Appalachian Development and the Appalachian Research and Defense Fund, Inc., also excepted, arguing particularly that Federal development of the Blue Ridge site had been insufficiently explored.

We granted a second oral argument, held on November 11, 1971, at which all of the above parties were heard. And following public notice, the Chairman and all of the members of the Commission at the time visited the project site on December 13, 1971. We explored the sites of both reservoirs, in part by helicopter and in part from the ground; we viewed from the air the sites of the proposed state parks; and we flew downstream, past the Claytor Reservoir and past Radford, Virginia, to a point just downstream from the Federal Bluestone Dam at Hinton, West Virginia.

While the case was pending before us for decision, important litigation concerning the requirements of the National Environmental Policy Act (NEPA) was proceeding through the courts. In January, 1972 the Court of Appeals for the Second Circuit held in *Greene County Planning Board v. F.P.C.*, 455 F.2d 412

(1972), that NEPA requires that an environmental impact statement be prepared by our Staff in advance of hearing, and that such statement be "subject to the full scrutiny of the hearing process". On October 10, 1972, the Supreme Court denied this Commission's petition for a writ of certiorari. *F.P.C.* v. *Greene County Planning Board*, 409 U.S. 849.

The Staff had prepared an environmental impact statement in this case and had filed it on April 21, 1971, but because hearings had been concluded in December, 1970, that statement had not been subjected to cross-examination. In light of the *Greene County* decision, we concluded that an opportunity for cross-examination must be afforded to the parties to this proceeding. By our order of November 2, 1972, we thus remanded the case yet again, "to permit the further examination of environmental issues", and "so that the requirements of the *Greene County* decision can be met fully". We afforded the Staff an opportunity to modify its prior environmental statement, if it chose.

Additional petitions to intervene followed our remand order, and we granted all of them, noting in our order of March 9, 1973, that even though a petition to intervene herein may be deficient,

> . . . we are disinclined to deny intervention in this proceeding to any petitioner that may have a genuine interest in it. For our part, we think the public interest will be best served in this case by our acting with special generosity upon petitions to intervene. We have so acted in this case in the past.

Intervention was accorded to Congressman Wilmer D. Mizell of North Carolina, Mr. Sidney B. Gambill of Crumpler, North Carolina, the Upper New River Valley Association, the New River Chapter of the Daughters of the American Revolution, the New River Chapter of the Izaak Walton League of America, and Young's Chapel Baptist Church.

We shall detail the procedures followed in connection with environmental considerations more fully at a later point in this Opinion. For purposes of this chronology, it is sufficient to note that, following our remand order, the Presiding Administrative Law Judge promptly called a prehearing conference of the parties, held November 21, 1972, to establish further procedures. Pursuant to them the Staff on January 23, 1973, filed and circulated a revised Draft Environmental Impact Statement; and, following the receipt of comments from parties, agencies, organizations, and individuals, and following the modification of the impact statement in light of such comments, the Staff on June 18, 1973, filed and circulated its Final Environmental Impact Statement (FEIS). That Statement was admitted into evidence at the outset of the further hearings, held on July 24 and 25, 1973, and the parties were then afforded the opportunity to cross-examine Staff witnesses with respect to it. All of the parties had been given until July 13, 1973, to file additional direct testimony for the remanded hearings held later that month, but, except for the Final Environmental Statement of our Staff, none did so. Following further briefing, Presiding Judge Levy issued his third decision, denominated Additional Supplemental Initial Decision, on January 23, 1974.

In his third decision, the Administrative Law Judge again recommends the licensing of the Blue Ridge project, but the precise project that he now recommends differs in two major particulars (and in numerous lesser particulars) from the one he earlier endorsed. The Modified Blue Ridge Project that now emerges—and which we license—is one without water quality control storage, that very controversial issue having been eliminated as a result of the determination by the Administrator of the Environmental Protection Agency, pursuant to section 102(b)(6) of the Federal Water Pollution Control Act, that "no storage for regulation of streamflow for purposes of water quality should be included in the Blue Ridge Power Project". As a result, the lower reservoir of the project has

been reduced in size. Further, the Administrative Law Judge recommends that the drawdown of the upper reservoir never exceed 10 feet. The delay in construction of the project has resulted in a modification of Appalachian's power needs at the time that operations commence, so that this lesser drawdown—greatly welcomed by most of the parties—is acceptable in terms of project economics and power benefits.

The exceptions filed to this latest decision are fewer in number than on previous occasions, but they are no less critical. The principal opponents of the Modified Project at this time are the parties that represent those residing in the area of the project: the State of North Carolina, Congressman Mizell of North Carolina's Fifth District, Ashe and Alleghany Counties in North Carolina, Grayson County in Virginia, and, filing jointly, the New River Chapters of the Izaak Walton League and of the DAR, and the Upper New River Valley Association. Exceptions to more limited aspects of the third decision have also been filed by the Commonwealth of Virginia and the Staff. Exceptions filed to the decisions of October 1, 1969, and June 21, 1971, of course remain live, to the extent that they are directed to issues that themselves remain live, and we shall deal with them below.

The license application has, we believe, been given not only protracted, but ample consideration.

On the basis of this extensive record, we conclude that the Modified Blue Ridge Project should be licensed — for the reasons and on substantially the terms set forth by the Administrative Law Judge in his decisio of October 1, 1969, as modified by his further decisions of June 21, 1971, and January 23, 1974. To the extent that the license provisions contained in this Opinion vary in a material way from those contained in the Administrative Law Judge's decision of Jan ary 23, 1974, we shall explain those changes and our reasons for them in the pages that follow. As will also appear the effective date of the license will be January 2, 1975. On that date the license

will be effective, unless an Act of Congress has intervened to delay or foreclose the project.

(2) DESCRIPTION OF THE LICENSED PROJECT

The Modified Blue Ridge Project would be constructed on the New River, in southwestern Virginia and northwestern North Carolina. The New River is in fact very ancient, and it is widely and rightly regarded as particularly scenic. It rises in northwestern North Carolina near the Tennessee border, and flows northeasterly into Virginia, crossing and recrossing the state line. It is in this upper portion of the New River that the project would be built. Near Radford, Virginia, the course of the river turns to flow in a northwesterly direction into West Virginia. The portion of the river in West Virginia below the point where the Gauley River joins the main stream is called the Kanawha River. The Kanawha River then flows to its confluence with the Ohio River at Point Pleasant, West Virginia.

The Modified Blue Ridge Project is a two-part project consisting of an Upper Development, involving a 26,000-acre reservoir and pumped storage facilities, and a Lower Development, with a 12,390-acre reservoir and conventional hydroelectric facilities. In commenting upon this kind of project, our *1970 National Power Survey* states,

> Conventional hydroelectric developments use dams and waterways to harness the energy of falling water in streams to produce electric power. Pumped storage developments utilize the same principle for the generating phase, but all or part of the water is made available for repeated use by pumping it from a lower to an upper pool. (p. I-7-1)

> The ability to start quickly and make rapid changes in power output makes hydroelectric plants particularly well adapted for serving peak loads, and for frequency control and spinning reserve duty. If operating at less

than full load, they are, in most cases, able to respond very rapidly to sudden demands for increased power. Their ability to supply starting power to steam-electric plants following a major power failure has been demonstrated on several occasions in recent years. (Ibid.)

A pumped storage plant has the same favorable operating characteristics as a conventional hydroelectric plant—rapid start-up and loading, long life, low operating and maintenance costs, and low outage rates. The ability of a pumped storage plant to accept or reject large blocks of load very quickly makes it much more flexible than a steam-electric plant, either fossil-fueled or nuclear, in following the load fluctuations which occur on a minute-to-minute basis in an electric system. This ability to follow the changes in the system load so as to furnish a portion of the peaking requirements permits more uniform and efficient loading of the fossil-fueled and nuclear units. Also by pumping in the off-peak hours, the plant factor of the base load thermal units is improved, thus reducing severe cycling of these units and improving their efficiency and durability. (p. I-7-3)

Evidence in this proceeding amply supports the usefulness from an operating standpoint of the particular pumped storage project, with conventional hydroelectric facilities, herein proposed by Appalachian. On occasions in the past we have had the opportunity to explore the operating benefits, as well as the environmental benefits, of pumped storage projects, and we have concluded that such benefits are significant and compelling. (See *Scenic Hudson Preservation Conference v. F.P.C.*, 354 F.2d 608 (1965), cert. denied 384 U.S. 941 (1966); 453 F.2d 463 (1971), cert. denied, 407 U.S. 926 (1972).)

The Blue Ridge Upper Development would lie principally in Grayson County, Virginia, with portions of the reservoir extending into Ashe and Alleghany Counties, North Carolina. A dam 300 feet high and 1,500 feet long would be built at

river mile 337.5 (with river mile zero at the Ohio River), and behind it, with the help of dikes, would lie a reservoir holding, at its normal maximum elevation (2,652 feet), 2,010,000 acre-feet of water. The dam would be 1,100 feet thick at the base. Of the reservoir surface, about 14,000 acres would lie in Virginia and about 12,000 acres in North Carolina. About 185 miles of the Upper Reservoir shoreline would lie in Virginia, about 240 miles in North Carolina. Twenty-six islands would be created by it.

Under the terms of the license that we herein grant, the drawdown of the upper reservoir would at no time exceed 10 feet. Between the normal maximum elevation of the upper reservoir of 2,652 feet, and the permitted drawdown level of 2,642 feet, usable storage for 245,000 acre-feet of water would be provided. This water would be used for normal power operations and for spinning reserve capacity to meet emergencies.

Eight tunnels would convey the water to a powerhouse located near the toe of the upper reservoir dam, where they would connect with eight reversible pump-turbines. These reversible units would have a rated generating capacity of 200,000 kilowatts each, and a pumping capacity of 11,000 cfs and 9,000 cfs at dynamic heads of 220 feet and 275 feet, respectively. In the manner of pumped storage projects generally, the units at the Blue Ridge Upper Reservoir would be expected to serve as pumps during off-peak periods—6 to 8 hours each day, Monday through Friday, and for as many additional hours on weekends as are necessary in order to establish the pool level in the upper reservoir. When they serve as turbines, the eight units would supply 1,600,000 kilowatts to 1,800,000 kilowatts of generating capacity, depending upon the available head. As generators, the units would also take advantage of the natural flow to generate energy, without a requirement for any pumping. These units would generate 185,000 kilowatt-hours annually as a result of natural streamflow. From the upper reservoir powerhouse, which would hold the reversible units, two single circuit 765,000-volt transmission lines of

about 31 miles each would run to Appalachian's newly constructed substation near Foster Falls, Virginia. From there the Blue Ridge power would be further distributed throughout the American Electric Power Company's system.

The Lower Development would lie adjacent to and just below the Upper Development, with the dam constructed at river mile 309. The proposed dam, 236 feet high and 2,000 feet long, with a base thickness of 900 feet, would create a reservoir holding 1,061,000 acre-feet of water at elevation 2,432, and 901,000 acre-feet at its normal maximum operating level of 2,420 feet. At elevation 2,420 the Lower Development reservoir of about 11,000 acres would lie largely in Grayson County, Virginia, but would extend into Alleghany County, North Carolina.

We would permit a drawdown of the lower reservoir to elevation 2,390. Between elevations 2,432 and 2,390 approximately 440,000 acre-feet of water could be accommodated. Of this amount, 150,000 acre-feet would be used for normal power operations; 130,000 would be available for low flow augmentation; and space for 160,000 acre-feet (lying between approximate elevations 2,432 and 2,420) would be reserved for flood control storage. Utilizing the river flow, the lower development would produce about 200,000,000 kilowatt-hours per year.

Two concrete tunnels would convey Lower Development water to two conventional generating units, each with a rated capacity of 100,000 kilowatts. Power would normally be generated by them 4 to 8 hours, Mondays through Fridays. Generally power would not be generated at the Lower Development on Saturdays and Sundays. From the power plant serving the Lower Development, a double-circuit 138,000-volt tie line would run 5.6 miles to a switching station near Fries, Virginia. The power transmitted by it would, ultimately, serve all of the American Electric Power system.

Both developments would be operated by remote control from Roanoke, Virginia.

As is true of pumped storage projects generally, the Blue Ridge Project, to the extent that it utilizes water pumped from the lower reservoir, would consume about 3 kilowatt-hours for pumping purposes for every 2 kilowatt-hours of power that it generates. But to the extent that Blue Ridge would produce 385 million kilowatt-hours of energy annually from use of the natural stream flow, that ratio of 3 to 2 is improved over the ratio applicable to pure pumped storage projects, including the Cornwall project with which we dealt in *Scenic Hudson, supra.*

(3) POWER BENEFITS

Throughout most of the months and years of this proceeding, the question of the need for the power that Blue Ridge would produce has been free from controversy. The need was consistently recognized by the Presiding Judge and conceded by the parties. Indeed, most of the voluminous record before us can be reviewed without many reminders that we are here dealing with an electric power project. The other public benefits arising from the project, benefits that have been so extensively explored, are ancillary to the fundamental purpose of Blue Ridge: the production of electricity.

In their exceptions filed in February of this year, two parties cast doubt upon the need for electricity from the Blue Ridge project. Congressman Mizell argues that the need for Blue Ridge power "has never been substantiated or justified"; Ashe and Alleghany Counties say that " 'reliable power supply' is not a pressing need".

We disagree. The need for Blue Ridge power has been abundantly displayed in this record. We call attention particularly to Exhibits 205. 206 and 228 and to the extensive Appendix H to the Final Environmental Impact Statement. And the "pressing" quality of the national need for reliable electric power cannot seriously be doubted. This Commission is by law responsible for meeting the need. Indeed, we are charged by the Federal Power Act with assuring not merely a "reliable"

supply, but "an abundant supply of electric energy throughout the United States". As this record demonstrates, the Blue Ridge project will create no abundance, but it is essential for reliability.

The Appalachian Power Company is a wholly owned subsidiary of the American Electric Power Company, which is in turn an investor-owned public utility holding company. The American Electric Power Company (AEP) owns seven operating subsidiaries, and they serve a wide area that includes parts of Virginia, Indiana, Kentucky, Tennessee, Michigan, Ohio and West Virginia.

The Modified Blue Ridge Project is needed by the AEP system to meet its projected load growth. A review of the evidence of record makes clear that all of the power Blue Ridge can produce will fall far short of meeting the peaking needs of the AEP system in the early 1980's. Our own *1970 National Power Survey* shows that Appalachian has not exaggerated the need (see, e.g., p. I-18-23). The East Central Region of the United States, which includes the AEP service area, will require many times the output of Blue Ridge if the needs of the 1980's and later years are to be satisfied.

Blue Ridge power would be used for peaking purposes to provide spinning reserve capacity and to improve system reliability, and for this role a pumped storage project is peculiarly suitable. The customers of AEP companies, however, will not stand alone as beneficiaries of Blue Ridge power. As the Presiding Judge rightly observed, the project ". . . will improve system reliability and reserves to the benefit, if needed, of the entire eastern seaboard and central United States" (Supp. In. Dec., p. 20). We are wholly convinced that the electric power to be generated by the project is needed, and that the potential beneficiaries of that power represent a sizeable part of the population of the nation.

(4) RECREATION BENEFITS

The recreation potential of the area where the project would

be located is enormous. Even now there are great attractions to visitors, but when water is added, it is destined to become one of the principal recreation areas for the eastern portion of the United States. The record is replete with testimony—much of it lyrical and all of it incontestable—as to the area's amenities. As a recreation witness for the Commonwealth of Virginia testified,

> . . . consider what potentials exist here. To begin with, there is spectacular scenery, ranging from the deep canyon-like gorges of the Breaks Interstate Park to the distant views to be had from such places as Mt. Rogers and the Great Smokies. Most of the mountains are covered with magnificent forests. Then, there are sections, such as the area of Blue Ridge Reservoir, that are only partially forested and less steep, thus offering a variety of scenery. Trails and scenic drives already are available; . . . a trip through this country on the existing local highways is a most refreshing experience. The addition of the Blue Ridge Parkway, the Appalachian Parkway, and the proposed scenic drive in the Mt. Rogers National Recreation Area will make this a tremendous drawing card for motorists.

At the present time, although not set up for intensive use on any large scale, this country affords wonderful opportunities for picnicking. camping, hiking, bicycling, driving, nature walks, sightseeing and other activities related primarily to the land. When water is added there will be many more things for people to do by way of active participation, and this is a very important consideration for both vacationers and day-users. Water will mean swimming (the number 1 outdoor recreational activity by the year 1980), boating, fishing and water skiing. Not only will these active water-related sports be added to the list of available things-to-do, but the enjoyment of walking, camping, driving, picnicking, bicycling, sightseeing and all other activities will be tremendously enhanced. There is a possibility for making all forms of

> outdoor recreation available in this beautiful, mountain setting, with the result that vast numbers of people may make use of them. (John Dudley Scruggs, at Tr. 1476-77)
>
> It is safe to say that the area under study, assuming the inclusion of a relatively stable Blue Ridge Reservoir, possesses a recreation potential equaled by few others in the eastern half of the United States, and if carefully programmed and developed, will become one of the really significant agencies in meeting the anticipated demands for recreation facilities by the year 2000. (Scruggs, at Tr. 1482)

We shall consider below the matter of the stability of the reservoir, i.e., drawdowns, but will first turn to the foreseen parks and other recreational areas, to shoreline control and to the project's effects upon fishing.

(a) *State Parks and Recreation Areas*

Of the two project reservoirs, the upper reservoir would be superior from the standpoint of recreation potential. Its surface area would be more than twice as large as that of the lower reservoir; it would have 165 more miles of shoreline; it would have 26 islands not subject to flooding; its greater elevation would result in more attractive summer temperatures, and it would be more accessible. The topography of the lower reservoir area is steep, and the lake to be created there would be long (29 miles) and narrow, and largely surrounded by canyon-like banks. Access to it would be relatively difficult. Moreover, because flood control storage and low flow augmentation storage are to be accommodated almost entirely in the lower reservoir, and because the lower reservoir would have a smaller area, the surface of the Blue Ridge lower reservoir would be permitted to fluctuate up to 42 feet (although it would rarely do so) compared to the 10 feet that we will allow for the upper reservoir. For all of these reasons the upper reservoir of Blue Ridge, with its 26,000-acre surface at its

maximum elevation, is rightly foreseen as the project's principal contribution to recreation.

It is thus at the upper reservoir that the States of Virginia and North Carolina propose that new state parks will be located. The upper reservoir would be fairly evenly divided between Virginia and North Carolina—with more than one-half of its surface area in Virginia and more than one-half of its shoreline in North Carolina. The lower reservoir would be located almost entirely in Virginia. Appalachian has agreed to spend $3 million to acquire land for the two state parks, and to acquire and develop other recreation facilities. It is our judgment, as it was Judge Levy's that this amount may be insufficient to permit Appalachian to acquire all of the land needed for the parks, and we thus agree with the Presiding Judge that Appalachian must be required to do more.

As to the proposed Virginia park, little argument now exists. At earlier stages of the proceeding, when allowance for a 12 foot drawdown was contemplated during a portion of each year, Virginia expressed an unwillingness to develop the Virginia State park (e.g., Va. In. Br., Sept. 10, 1973, p. 19). With the establishment of a 10 foot limitation at all times, however, we understand that Virginia is now prepared to proceed (Va. Reply Br., Oct. 25, 1973, pp. 7-8). A site extending over 2,400 acres, located on the main body of the upper reservoir, has been selected by Virginia, and Appalachian has agreed to spend $1 million to acquire that acreage. The record indicates that that amount of money will probably be sufficient, given pertinent land values. If the land can be acquired for less, Appalachian has agreed to give Virginia the difference, with the expectation that such amount would be used by Virginia for the planning and development of the park. Nothwithstanding the probability that the $1 million will be sufficient, we believe it sound to impose upon Appalachian the further requirement that it acquire all of the 2,400 acres, even if its proposed $1 million is thereby exceeded. If the proposed $1 million is not exceeded, Appalachian's agreement to pay to

Virginia the difference will continue to apply. The comprehensive development which we seek can only be achieved if the two state parks become a reality, and we thus find it necessary to obligate Appalachian to acquire all of the proposed Virginia park acreage.

We join the Presiding Judge in imposing the same requirement with respect to the proposed North Carolina state park. As in the Virginia case, Appalachian proposes to spend $1 million in acquiring land for the North Carolina park, but unlike its expectations in Virginia, Appalachian does not anticipate being able to acquire all of the acreage for that amount. Originally, North Carolina proposed a park of 4,910 acres, but later it reduced the acreage to 3,900. The Staff and the Interior Department took exception to the requirement that the North Carolina park be 3,900 acres, instead of 4,910, but inasmuch as the former figure represents North Carolina's own expressed preference (see In. Br., June 10, 1969, p. 18), from which it has not since deviated, we adopt the 3,900 figure. Of the 3,900 acres, Appalachian believes that its $1 million "should permit the acquisition of /a/ 2000 to 2500 acre state park" (Tr. 4518). We think this is not enough. We cannot dispute North Carolina's view, and the Judge's, that park land is almost "the only direct benefit" North Carolina will derive from the project (In. Dec. p. 15), and accordingly we will require Appalachian to acquire the entire 3,900 acres. We do not consider that this requirement will do injury to the project's economics. By this opinion, project economics may improve, for Appalachian is relieved of the burden of water quality storage for Charleston, and, as discussed below, it may also be relieved of certain shoreline acquisition costs. We therefore require the purchase by Appalachian of all of the land for North Carolina's 3,900-acre park.

The record discloses discussion concerning a proposed interstate park, or a proposed "future recreation area", as the Staff calls it, consisting of an additional 3,424 acres. While the only opposition to this acquisition appears to come from Appalachian, which complains that it would add $1,275,000 to project costs, we have difficulty in detecting any visible support for it, except from the Staff. Staff alone excepted to the Examiner's statement that "it is unreasonable to burden the project with substantial additional land for an interstate park which may never come into being and cannot now be justified as necessary" (In. Dec. p. 14). Neither Interior, with its recreation responsibilities, nor the States, with theirs, take exception. We agree with the Presiding Judge, and we, therefore, will not require the acquisition of the additional 3,424 acres.

With the third $1 million to be devoted to recreation development, Judge Levy in his Initial Decision required Appalachian to purchase and develop a number of lesser facilities—including an overlook-picnic area at each of the dams, two bank fishing areas below the lower dam, at least 30 public access points to the reservoirs and canoe portages around the dams. We agree with these requirements.

The two overlook-picnic areas would be adjacent to each of the dam sites. Each would provide parking for about 100 cars and would contain picnic sites and the usual facilities that accompany them. Because excellent bank fishing is expected in the tailwater area downstream from the lower dam, Appalachian would provide two public access areas there, with parking, picnic facilties and other amenities. All of the foregoing would be acquired, developed, operated and maintained by Appalachian. Appalachian would also be required to acquire, for development and operation by the appropriate state agencies, no less than 30 additional public access points at the reservoirs. Of these, at least 21 would be located at points where existing roads terminate at the reservoirs, and 9 would be of about 10 acres each, a size sufficient to permit their use for boat-launching and day use facilities. Four additional public access points would be provided by the rights-of-way acquired by Appalachian for canoe portages—one at the upper reservoir, two at the lower reservoir, and one at the tailwater area.

These portages would make the New River available to canoeists and others from its head waters to a point near Fries, Virginia.

Although the record indicates that $1 million will permit acquisition of all of the foregoing areas, we will not limit Appalachian's responsibility by imposing a dollar ceiling. Appalachian will be required to acquire all of the recreational sites, as more fully described in the final Environmental Statement and in Article 42 of the license, even if their cost exceeds $1 million.

In acquiring land for the project reservoirs, Appalachian will also be required to acquire in fee all islands in the two reservoirs.

(b) *Shoreline Control*

In his 1969 Initial Decision, Judge Levy imposed upon Appalachian the requirement that it obtain shoreline control by acquiring in fee a 3-foot vertical strip around each reservoir, and that, in addition, it acquire in fee or in scenic easements a 200-foot horizontal strip around 80 miles of the upper reservoirs. These 80 miles would be in addition to the 75 miles of upper reservoir shoreline that Appalachian would acquire in connection with the two State parks, and the particular 80 miles are specified in its recreation plan, shown on Exhibit No. 162. In his 1971 Supplemental Decision the Judge modified the foregoing to the extent of permitting local zoning to substitute for the acquisition of the 200-foot horizontal strip, if Appalachian were to agree and the Commission were to approve. The three counties in which the project would lie have moved toward the adoption of zoning ordinances that would provide shoreline control, but the record before us does not show that they have yet been adopted. (See Exhibit No. 281.) In support of the local zoning alternative, the Presiding Judge stated,

> Effective local zoning will reduce the amount of land involved in condemnation proceedings, encourage local private development for recreation, enhance the local tax base, minimize project land acquisition costs, and give the local residents a greater stake in and control of their communities. (Supp. In. Dec. p. 26)

We agree.

In his latest decision, as in his 1971 decision, Judge Levy has provided for the local zoning alternative. (See his Article 43.) We endorse the effect of his language, but as will appear, we have expanded upon it so as more fully to insure that shoreline use will be compatible with the recreation values of the project. (See our Article 43.)

Several parties take exception to elements of the foregoing. The State of North Carolina and others have questioned our basic authority to require land acquisitions for shoreline control purposes; the Staff believes the requirements imposed by the Administrative Law Judge are insufficient; Interior joins the Staff in opposing a local zoning alternative; and the Counties, with the support of the Farm Bureau intervenors, have opposed both the conclusion expressed in the Supplemental Initial Decision as well as the Staff and Interior positions.

First, as to the argument that we lack authority to require acquisitions of land for shoreline control, we think it well settled that we have such authority. *Chapman* v. *Public Utility Dist. No. 1 of Douglas Co., Wash.*, 367 F.2d 163 (1969), supports our conclusions; the record contains adequate justification for it (e.g., Tr. 3745-3749); and our own announced policy requires it (Orders No. 313 and 314, 34 FPC 1546, 1550 (1965)).

Turning next to the Staff's position, the Staff first argued, by way of an exception to the 1969 Initial Decision, that acquisition of a 200-foot horizontal strip for 80 miles of upper reservoir shoreline would be inadequate. The Staff contended that Appalachian must in addition acquire a 50-foot horizontal strip (when its distance exceeds that of the 3-foot vertical strip) around all of the rest of the 425-mile shoreline of the upper

reservoir. In its exceptions to the 1971 Supplemental Decision, the Staff reduced its proposed requirement, then advocating only a 25-foot horizontal strip around all of the upper reservoir —except for the 155 miles more fully protected by the 200-foot requirement or by inclusion in the state parks.

Staff remains of the view that a 25-foot horizontal strip around all of the upper reservoir is essential. Without it, the Staff says, "the environmental quality, including esthetic qualties, of the upper reservoir will be endangered" (Br. on Excep., Feb. 22, 1974, p. 5).

We are persuaded that the Staff's position is correct. Portions of the upper reservoir shoreline would not be adequately protected by the acquisition of only a 3-foot vertical strip. Where the shoreline gradient is steep, the protection would run only a very short horizontal distance, and objectionable structures could be erected very close to the shoreline. It seems to us virtually as important to avoid this result in the remote reaches of the reservoir as it is in the more open and accessible shoreline. Acquisition in fee of all of the 25-foot horizontal strip, however, we believe is unnecessary. Scenic easements may suffice and would impose a lesser hardship in those areas where the land is already devoted to compatible uses. If scenic easements instead of fee title are acquired, however, we shall further require that the Licensee acquire such additional easements as may be necessary to afford to the public reasonable access to project lands and water for recreational purposes. This additional requirement is necessary in light of Article 19 of the license, a part of our standard form, which provides in part that

> . . . the Licensee shall allow the public free access, to a reasonable extent, to project waters and adjacent project lands owned by the Licensee for the purpose of full public utilization of such lands and waters . . .

But we also agree with the Administrative Law Judge, over the objection of both Staff and Interior, that if adequate local zoning ordinances are enacted by the Counties—and, we would

add, if such zoning laws are adequately enforced—they should be permitted to substitute for Appalachian's acquisition, in fee or as scenic easements, of both the 200-foot strip and the additional 25-foot strip. Inasmuch as this record contains no evidence of enactment of such ordinances, we cannot now permit them to substitute for acquisitions by Appalachian, and our order must thus be stated in the alternative. We will, therefore, require that Appalachian acquire the 200-foot horizontal strip around 80 miles of the upper reservoir, and a 25-foot horizontal strip around the rest, unless Appalachian presents information to us indicating that adequate local zoning laws exist and that they are adequately enforced. Appalachian may present its first report on this subject to us as soon as it chooses, and it will be required thereafter to report at least annually, We shall afford other parties to this proceeding an opportunity to file written comments with us concerning Appalachian's first report. They may also file comments on subsequent reports, if they choose. On the basis of Appalachian's initial report and the filings of the parties concerning it, we will determine whether Appalachian may be relieved of the 200-foot and 25-foot horizontal acquisitions. In making our determination, we will be guided by our essential objective of achieving land use around the reservoir which is consistent with the optimum use of the project for recreation purposes. Use of shoreline land must "not endanger health, create a nuisance, or otherwise be incompatible with over-all project recreational use", as stated in our Order No. 313 of December 27, 1965 (34 FPC 1546, 1550).

If we determine initially that adequate local zoning laws exist and that they are adequately enforced, then Appalachian will be relieved of the 200-foot and 25-foot acquisitions, and it will continue to be so relieved so long as that condition continues. We will determine, on the basis of the annual reports, and on the basis of such hearings as may, in the Commission's judgement, be necessary or appropriate, whether the condition continues to be met.

In permitting local zoning to substitute for acquisitions in

fee or of easements by Appalachian, under the conditions we impose, we defer as fully as we conscientiously can to the preference for local control of this land, a preference very strongly expressed by the affected counties and the Farm Bureau intervenors. At the same time, by providing a technique for assessing the adequacy of local zoning laws and the adequacy of their enforcement, we have undertaken to meet the doubts expressed by the Staff and Interior that local zoning, standing alone, would be unreliable.

In summary, we will require Appalachian (i) to acquire in fee a 3-foot vertical strip around the maximum elevation of each reservoir (to elevation 2,655 feet m.sl. for the upper reservoir, and elevation 2,435 feet m.s.l. for the lower reservoir), (ii) to acquire, in fee or by easement, control of a 200-foot horizontal strip for a distance of about 80 miles around the upper reservoir, as shown on Exhibit 162, and (iii) to acquire, in fee or by easement, control of a 25-foot horizontal strip around the remainder of the upper reservoir, but Appalachian may be relieved of the second and third requirements if we subsequently conclude that adequate local zoning ordinances exist and are adequately enforced. Appalachian will continue to be relieved, so long as the condition continues.

(c) *Fishing and Downstream Recreation*

In his decision of January 23, 1974, Administrative Law Judge Levy recommends the inclusion of 130,000 acre-feet of water in the lower reservoir for low flow augmentation of the New River, in order to improve fishing and recreation below the Bluestone Dam in West Virginia. We agree that this should be done, and it appears that the parties concur.

It is clear from the record that West Virginia prizes the fishery and the recreation area located below the Bluestone Dam. It has been represented to us as one of West Virginia's best, and it is now used by sportsmen, canoeists, and other recreationists in considerable numbers. It is also clear from the record, however, that both fishing and recreation would

be enhanced if the river flows below Bluestone were augmented during a portion of the recreation season.

An October, 1969, flow study by the West Virginia Department of Natural Resources found that optimum fishery flows are approximately 2,500 cfs and optimum flows for general recreation purposes are approximately 3,000 cfs. (Tr. 5054) Exhibit 245 shows the duration of flows at Bluestone Dam for the months of May through September for the years 1949 through 1968. Flows were less than 2,500 cfs for about 3 percent of the time during May, 25 percent of the time during June, 43 percent during July, 53 percent during August and 67 percent during September. It is our judgment that the lower reservoir of the Blue Ridge Project can, and should, be designed and operated to increase the period of optimum flows for fishing and recreation below Bluestone Dam. We are, therefore, requiring that 130,000 acre-feet of storage be included in the lower reservoir to supplement natural low flows below Bluestone Dam for the benefit of fishing and recreation.

The 130,000 acre-feet of storage would be sufficient to augment low natural flows to 2,500 cfs in years of average stream flow. That amount of storage would be insufficient to provide such a flow in unusual years (e.g., about 400,000 acre-feet would be required in a year such as 1930, when the lowest flow of record was experienced (Ex. 239, p. 20), but we cannot make provision to augment all low flows. If we were to do so, we would be required to expand greatly the size of the lower reservoir and to permit even heavier drawdowns there, and those consequences would be unacceptable in terms of both environmental consideration and project economics. Inasmuch as the frequency of low flows increases progressively from May through September, we will require that the 130,000 acre-feet of storage be used beginning July 1 of each year and extending through September 30, to augment to 2,500 cfs natural flows of less than 2,500 cfs below Bluestone Dam. This should assure near optimum flows for fishing and recreation during the peak recreation months of July and August.

In addition to the assistance that would be provided by Blue Ridge below Bluestone, the creation of the two Blue Ridge reservoirs would otherwise expand and enhance sport fishery resources. The upper reservoir is expected to support a two-story fishery, with bass, sunfish and other warm water water fish in the upper story, and with trout in the cold understory area. The lower reservoir is likely to support a similar two-story fishery. Excellent bank fishing will be available in the tailwater areas of the lower dam. The Commonwealth of Virginia initially indicated a preference for a cold water fishery for this area, and for several miles below the project, but the record suggests that Virginia may ultimately choose to perpetuate the existing warm water fishery there. If so, water from the warmer portion of the reservoir may be used and a warm water fishery can be preserved. The decision is Virginia's to make, and the license will permit either result.

(d) *Drawdowns*

Most of the parties recognize that in a project such as this, relatively heavy drawdowns of the lower reservoir—in this case of up to 30 feet in the absence of flood control storage, and up to 42 feet with such storage—are essential. The project cannot be operated for the production of power and for other beneficial purposes without permitting lower reservoir drawdowns of this magnitude.

Until recently there was no comparable agreement as to the drawdown level of the upper reservoir. Because the upper reservoir is to have marked importance for recreational purposes, its degree of stability is critical. In his first decision, the Presiding Judge proposed a drawdown maximum of 12 feet from September through May of each year, and in his second decision he permitted a 12 foot drawdown during those months until 1985. A ten-foot limitation would have applied at all other times. Although most of the parties, including Virginia, did not object to 10 feet—recognizing that during power emergencies a drawdown to that level could be necessary—many, particularly including Virginia and North Carolina, objected very strongly to 12 feet.

In his third decision, the Presiding Judge has recommended a 10-foot limitation at all times. Inasmuch as no exceptions to the third decision take issue specifically with the new drawdown limitation, we infer that most of the parties are reasonably satisfied by it.

An explanation as to the reason for the acceptability now of a 10-foot limitation may be helpful.

The Blue Ridge project is designed to provide dependable generating capacity, and to do so requires an adequate power pool. The power pool is the volume of water that is circulated between the upper and the lower reservoir, and its size is determined by the amount of energy that Blue Ridge will be called upon to generate from time to time. During the early years of project operations a power pool on the order of 245,000 acre-feet will be required, and that amount is represented by the top 10 feet of the upper reservoir. This amount is required in order fully to utilize the upper development generating capacity. That capacity will need to be available in order to meet peak needs and to provide for spinning reserve capacity.

Appalachian expects, however, to operate the upper Blue Ridge power plant for fewer hours per day in later years, from 1995 on, than it will be required to do in the initial years of operations—foreseen for the early 1980's. According to the magnitude and characteristics of Appalachian's projections of future power loads, the Blue Rilge power development can be fully dependable while operating at a lower plant factor (i.e., for fewer hours per day) during later years. The amount of water storage required decreases approximately in proportion to the decrease in plant factor operation. The full 1,600,000 kilowatt capacity of the Upper Development will, however, be available and will normally be used to serve peak loads in both later and earlier years. At earlier stages of this proceeding,

when Appalachian hoped and expected that the Blue Ridge project would become a reality in the 1970's, its power needs at the commencement of project operations appeared to require a 290,000 acre-foot power pool, and an accompanying 12-foot drawdown. But the projected needs at the commencement of operations has, with the passage of time, been reduced to the 245,000 acre-feet, foreseen as needed in the early 1980's.

In any event, for our part, we are convinced that a 10-foot drawdown limitation is essential in the interests of recreation. It is in our view consistent with power needs. Therefore, at no time during the 50-year life of this project will the drawdown of the upper reservoir at Blue Ridge exceed 10 feet.

It may be useful to emphasize that what we here authorize is a maximum limitation, and that such maximum drawdowns will only rarely occur—the record indicates no more than 1 percent of the time—and they will not be prolonged. The record further indicates that after 1985 upper reservoir drawdowns will be less than 3 feet for 96 percent of the time during the summer recreation months, and by 2000 they will be less than 1½ feet for 96 percent of the same period. Appalachian's witness testified that the upper reservoir drawdown "will actually be less than that which exists at many natural lakes, as a result of natural causes" (Tr. 3725). The upper reservoir will be relatively stable most of the time.

While we understand that a wholly stable pool is desirable for recreation purposes, it cannot be achieved at Blue Ridge if power needs are to be met. We are here dealing with a project whose primary purpose is to produce power, and while we are prepared to impose stringent requirements to protect recreation values, as this opinion makes clear, we must also give due regard to the need for electricity. That need warrants the drawdowns here imposed.

(5) FLOOD CONTROL BENEFITS

A major public benefit of the project, and one beyond dispute, would be the 160,000 acre-feet of flood control storage capacity that it would provide for the upper New River area, an amount endorsed by the Army's Corps of Engineers. No flood control protection now exists between the lower reservoir site and the Federal Bluestone Dam at Hinton, West Virginia, and if the 1940 flood of record were to recur today, the Corps estimates that nonagricultural damage along that 146-mile route would total $82.4 million. Blue Ridge flood control storage of 160,000 acre-feet would reduce that damage by 72 percent.

During late stages of this proceeding, an issue developed as to the desirability of constructing the project so that it would provide not just 160,000 acre-feet of flood control storage capacity, but 186,000 acre-feet more, for a total of 346,000. That issue was resolved by the Administrative Law Judge in his last decision, apparently to the satisfaction of all parties, by excluding the additional flood control storage. We approve of that result.

In its Final Environmental Impact Statement the Staff had urged the additional flood control storage, with the expectation that such storage in the lower reservoir would permit a reduction in the flood control storage capacity now being provided in the downstream Bluestone Reservoir of the U. S. Corps of Engineers. As a result, the water in the Bluestone Reservoir could be maintained at a higher level, thus providing an increase in recreational benefits provided by that reservoir. Following the last round of hearings, however, the Staff abandoned its advocacy of storage capacity in excess of 160,000 acre-feet. In its brief filed on September 10, 1973, the Staff pointed out that the larger storage area would require the taking of 2,000 additional acres and would displace an additional 115 people; it would add $1.7 million to construction costs, and $205,000 to annual operating costs. In return, annual flood control benefits of only $34,000 were predicted, and there was no certainty that recreation at Bluestone would be predictably improved (p. 4). In the circumstances, we join the Admini-

strative Law Judge in endorsing flood control storage capacity in the lower reservoir of 160,000 acre feet.

(6) WATER QUALITY CONTROL AND LOW FLOW AUGMENTATION

(a) *For the benefit of Charleston, West Virginia*

No issue in this proceeding has received more concentrated attention, and none has created more vigorous controversy, than the issue of improving the quality of the lower Kanawha River by the storage and controlled release of water from the Blue Ridge project. The pollution of the Kanawha at Charleston, caused largely by the waste discharges of the chemical industry located there, is massive, and notwithstanding treatment programs that have effected improvements, the problem is intractable and the river near its mouth in West Virginia remains heavily polluted. In light of these circumstances, it was urged at earlier stages in this proceeding that water be stored in the Blue Ridge reservoirs in large quantities—400,000 acre-feet at first, later rising to 650,000 acre-feet—with such water being released at such times and in such quantities as would improve the quality of the river downstream. This "pollution dilution" or "flushing", as it has been called, was strongly recommended by some parties, principally the Department of the Interior, and as strongly opposed by others, particularly the State of West Virginia.

The issue has now been eliminated. And with its elimination, much of the opposition to the Blue Ridge project, as evidenced by exceptions filed with respect to the 1969 and 1971 decisions of the Administrative Law Judge, has been removed.

This result has come to pass because of the Federal Water Pollution Control Act amendments of 1972, which became law on October 18, 1972. Section 102 (b) (6) now provides that

> No license granted by the Federal Power Commission for a hydroelectric power project shall include storage for regulation of streamflow for the purpose of water quality control unless the Administrator [of the Environmental Protection Agency] shall recommend its inclusion and such reservoir storage capacity shall not exceed such proportion of the total storage required for the water quality control plan as the drainage area of such reservoir bears to the drainage area of the river basin or basins involved in such water quality control plan.

As we observed in our order of November 2, 1972, the further remand that we therein required would permit the examination of the water quality control question in light of this new law. The Adminisrator of the Environmental Protection Agency addressed himself to the question thereafter, and on April 9, 1973, he determined that

> . . . no storage for regulation of streamflow for purposes of water quality should be included in the Blue Ridge Power Project.

(The Administrator's determination is set forth in full at pages 335-338 of the Final Environmental Impact Statement.)

The question of water quality control storage at Blue Ridge has been definitively answered. This Commission can attend to other issues.

(b) *For the benefit of Radford, Virginia*

Following the issuance of the Presiding Judge's decisions in 1969 and 1971, the Commonwealth of Virginia excepted on the ground that its needs for low flow augmentation in the area of Radford were inadequately met. It has again excepted on this point, most recently arguing that the provision contained in Article 51 (b) of the license recommended by the Administrative Law Judge in his decision of January 23, 1974, is inadequate. (Add. Supp. In. Dec., p. 31.)

The Commonwealth of Virginia anticipates increased industrialization in and around Radford if New River flows are made reliable, and they can be made reliable, Virginia con-

tends, if 70,000 acre-feet of water is stored in the lower reservoir, and if it is released so as to achieve flows at Radford of 1200 cfs through the year 1999, and 1400 cfs in the year 2000 and thereafter. The Administrative Law Judge proposes that the objective of 70,000 acre-feet be met within the 130,000 acre-feet to be stored to improve fishing and recreation below Bluestone Dam. And his license article provides for releases "to assure" flows at Radford of "up to" 1200 cfs through 1999, and "up to" 1400 cfs thereafter, "as the need arises". He further provides in his article 51 (b) that the

> "determination of Radford's needs up to such amounts shall be made by the State of Virginia, consistent with the provisions of this article, but the Commission reserves the right after notice and opportunity for hearing to prescribe any such releases as the public interest may warrant."

Virginia continues to object. In the circumstances, we are hard put to understand why, for we believe that Article 51 (b) meets Radford's needs as fully as is reasonable. Apparently Virginia believes that precisely 1200 cfs through 1999, and precisely 1400 cfs thereafter, must be guaranteed to Radford. The Presiding Judge's provision is for "up to" those amounts, "as the need arises". We think we should do no more. It would be unwise to give Radford, and Virginia, an inflexible guarantee, for Radford's needs may not in fact warrant releases of this magnitude, and some flexibility is required in the operation of this project if flows below Bluestone are to be suitably augmented.

It is important to recognize that Radford is, in effect, the fortuitous beneficiary of the flow augmentation that we herein provide for the river reach below Bluestone. We are not providing flow augmentation for Radford as such. If we were, the objections of Ashe and Alleghany Counties, to the effect that Radford's industry must meet waste treatment tests without the aid of heavier New River flows, would give us pause. As it is, our objective is to improve fishing and recreation below

Bluestone. Radford can be accommodated in the process, but its needs cannot be permitted to inhibit the objective of appropriate augmentation of flows in the river beyond, as herein provided.

(7) FEDERAL DEVELOPMENT

We turn next to the question of our responsibility under Section 7 (b) of the Federal Power Act. That section provides,

> Whenever, in the judgment of the Commission, the development of any water resources for public purposes should be undertaken by the United States itself, the Commission shall not approve any application for any project affecting such development, but shall cause to be made such examinations, surveys, reports, plans, and estimates of the cost of the proposed development as it may find necessary, and shall submit its findings to Congress with such recommendations as it may find appropriate concerning such development.

It is not our judgment that the development of the water resources here in question "should be undertaken by the United States itself". Accordingly, we do not propose to submit recommendations for Federal development to the Congress.

The Congress for Appalachian Development and the Appalachian Research and Defense Fund believe that we have not discharged our responsibilities under section 7 (b). These parties sought late intervention in July, 1970, and we granted that intervention by our Order of August 24, 1970, even though their tardiness was, we said, "both inconvenient and regrettable." On several occasions since, and during the December, 1970, hearings, these intervenors have contended that the question of public power versus private power has been insufficiently explored in this proceeding. Because they believe this is so, these parties say that we are not now in a position to make "the informed judgment that 7 (b) commands", as required by

Udall v. *F.P.C.*, 387 U.S. 428 (1967). These parties are not, they say, urging Federal development; they do not themselves have further evidence to introduce on the question; they are instead urging further studies to be performed by others, designed to show the relative advantages of public and private development. Only with such information, they say, can we decide whether to license the project for private development, or to recommend it to the Congress for public development.

We do not think that further studies are required. We do not state that the "in-depth study of possible federal development" which these parties advocate (in their 1971 Brief on Exceptions, p. 9) has been made, for clearly it has not. Their witness defined such a study as being "very costly", probably costing "at least a quarter million dollars" and requiring "six months to a year" (Tr. 6514). Our own experience suggests that both estimates are probably low. These intervenors state that their resources are insufficient to permit them to make the in-depth study. In fact the kind of study here advocated could not be undertaken by the Federal Power Commission, or by another Federal agency at our request, in the absence of additional funding and possibly a separate authorization as well. Of course, we would undertake to overcome that handicap if, in our judgment, the kind of full-scale study here urged were necessary to permit us to decide the case. And if it were deemed necessary, we would as surely defer our decision for the required period of study, even though the delay would almost certainly contribute further to the national energy shortage. But as we have said, we do not think such a study is required.

In our judgment there is sufficient evidence on the question of Federal development in the record before us. For example:

(1) During the hearings which preceded the 1969 Initial Decision, a group of electric cooperatives presented witnesses who favored Federal development, and they were cross-examined (Tr. 1828-2002). Appalachian and the Staff also presented testimony on this issue, and that testimony, too, was

subject to cross-examination (Tr. 977-1012, 2857-2877, 2959-2961, 2984-2990, 4048-4058). Several exhibits on the subject were made a part of the record (Ex. Nos. 11, 48-52, 55, 95A, 95B, 111-112, 200).

(2) The Presiding Judge in his 1969 Initial Decision considered the question of Federal development (pp. 16-19), and outlined his conclusions from the testimony presented. Among other things, he stated that the project represents "the highest and best use of the river reach" and that it would provide all of the needed public benefits

> without the delays and uncertainties that would inevitably accompany any effort to obtain congressional authorization in the face of the lack of support for federal construction evidenced by this record. (p. 17)

He observed that both the Corps of Engineers and the Department of the Interior, agencies with primary responsibility for the development of water resources, endorsed the project.

(3) The reopened hearings resulted in further testimony on the Federal question. That testimony included evidence from and cross-examination of witnesses for the Congress for Appalachian Development and the Appalachian Research and Defense Fund (Tr. 6431-6487, 6505-6565, 6587-6598), a witness for the Staff (Tr. 6798-6943), and statements of position from a U.S. Senator and a member of the Congress of the United States (Tr. 6492-6503).

(4) In his Supplemental Initial Decision in 1971, the Judge discussed the question of Federal development further (pp. 19-21). He therein pointed out that these intervenors "do not urge federal development of a different or better project," but instead doubt that Appalachian will provide power at as low a rate as a government project. As to this point, the Judge stated,

> Concededly, a federal development could make power available from Blue Ridge at costs lower than Applicant.

> But this lower cost of power would derive solely from lower federal financing costs and freedom from the tax burden incident to private development. This is not an adequate basis for a Section 8(b) recommendation.

The Judge called attention to the views of this Commission on this point, expressed in 1955:

> There is no provision in Section 7(b) or in any other section in the Act which leads us to believe that Congress intended that we recommend Federal development for the sole purpose of making power available at costs lower than would be possible if the same water resources were developed by a private entity under a license. Needless to say if the supplying of power at the lower costs resulting from Federal development should be considered as a decisive factor, there would be few cases involving major power projects where private development could be licensed under the Act because of the substantial difference in annual cost of investment money in favor of Federal over private financing and because of the much higher annual cost of taxes paid under private development as compared with the freedom from taxes under Federal development or, in some few instances, the minor annual payments by some Federal projects in lieu of State taxes. *Idaho Power Company*, 14 FPC 55, 59-60 (1955).

The Judge further observed that no Federal or State agency has recommended Federal development; that Federal development would "cost more, take longer, and provide less operating flexibility"; that additional studies will not materially assist us in deciding the issue; and that we ought not to be "immobilized by belated requests for further studies".

We do not think that *Udall* v. *F.P.C.*, *supra*, requires a different result. In that licensing case, the Secretary of the Interior had, after hearings before the Examiner were completed, recommended Federal development. The Commission permitted Interior's late intervention, but limited it to the filing of exceptions and participation in oral argument. The Secretary of the Interior asked that the record be reopened to permit him to introduce evidence in support of Federal development, but this was denied by the Commission. In this state of affairs, the Supreme Court stated:

> The issue of federal development has never been explored in this record. The applicants introduced no evidence addressed to that question; and the Commission denied the Secretary an opportunity to do so though his application was timely. The issue was of course briefed and argued; yet no factual inquiry was undertaken. Section 7(b) says "Whenever, in the judgment of the Commission, the development of any water resources for public purposes should be undertaken by the United States itself," the Commission shall not approve other applications. Yet the Commission by its rulings on the applications of the Secretary to intervene and to reopen precluded it from having the informed judgment that § 7(b) commands. (p. 434)

The situation before us is markedly different. Neither the Department of the Interior nor any other Federal or State agency advocates public development of the Blue Ridge site. No Federal agency and, indeed, no party to this proceeding has sought the reopening of the record to supply further evidence on the Federal question. (These intervenors have asked for further hearings so that some other party or parties may supply such evidence, but no other party has asked for that opportunity, and we think we can rightly infer that none has such additional evidence to offer.) And, as shown above, the issue of Federal development has in fact been explored in this record.

On the basis of this record, we believe we have an informed judgment. As we have stated above, it is not our judgment that the development of these water resources "should be undertaken by the United States itself". It is our judgment that the project should be licensed for development by the Appalachian Power Company.

(8) STATE CERTIFICATION OF WATER DISCHARGES

Prior to the general amendment in the fall of 1972 of the Federal Water Pollution Control Act, section 21 (b) of that Act, as amended by the Water Quality Improvement Act of 1970, imposed a particular requirement upon applicants for hydroelectric licenses. Section 21 (b) required an applicant for a Federal license for a project, if that project might result in a discharge into the navigable waters of the United States, to obtain a certificate from the state in which the discharge was to originate. The section provided also that the certificate was to indicate "that there is reasonable assurance . . . that such activity will be conducted in a manner which will not violate applicable water quality standards".

By letter of September 27, 1971, to the Commission Secretary, the State of North Carolina indicated that in its view a certificate from North Carolina would not be required. Appalachian applied for a cerificate from the Commonwealth of Virginia on June 14, 1971. The Virginia State Water Control Board on June 13, 1972, issued a certificate, to which several conditions are attached. The certificate, so conditioned, was accepted by Appalachian on June 14, 1972.

The requirement of section 21 (b) was therefore met. The 1972 amendments to the Water Pollution Control Act, which became law on October 18, 1972, contain in section 401 (a) (1) a provision similar to that contained in section 21 (b) of the earlier law. Those amendments further provide, however, in section 4 (b), for the continued effectiveness of certificates granted under section 21 (b). In the circumstances, the requirements of section 401 (a) (1) have also been met.

The Virginia certificate is set forth at pages 283-285 of the Final Environmental Impact Statement. To the extent that some of the conditions imposed by Virginia may not coincide precisely with the terms of the license that we herein issue, we believe that the provisions of the license which provide for

consultation among the interested parties will serve to eliminate any difficulties.

(9) TRANSMISSION LINES

We welcome the attention given in the Final Environmental Impact Statement to the location of Blue Ridge transmission lines. Relatively little consideration had been given earlier in this proceeding to this important aspect of the project. Transmission lines and their location are of fundamental importance to projects such as this, and we are aware that disputes over their location can frustrate and delay power projects for years on end. *Cf. Greene County Planning Board* v. *FPC, supra.*

As we have indicated above in our description of the project, the Blue Ridge project would require three transmission lines: two single circuit, 765,000-volt tie lines, each approximately 31 miles in length, running from the power station at the Upper Development to a newly constructed substation near Foster Falls, Virginia; and a double-circuit, 138,000-volt tie line, running 5.6 miles from the Lower Development to a switching station near Fries, Virginia. The three lines would be used to deliver power generated by the project to Appalachian and to other members of the AEP system. These lines would all be primary transmission lines for purposes of the Federal Power Act, and as such, the approval of this Commission is essential for their construction.

In recognition of our jurisdiction, our Staff undertook field studies relating to the routing of the transmission lines, with a view to recommending routes that would "have the least adverse impact on the human environment and yet maintain a high degree of system reliability" (FEIS, p. 69). The recommended routes are set forth on pages 65 through 70, and in Appendix A-6, of the Final Environmental Impact Statement.

No exceptions have been filed that take issue with the specifics of the proposed routing. None casts doubt upon the status of these lines as primary lines. But Virginia asserts that the routes must be approved by the Virginia State Corporation

Commission, in the manner set forth in the laws of Virginia. Virginia argues:

> Virginia submits that its control over the routing of transmission lines associated with the Project has not been pre-empted by the federal government. Virginia acknowledges the authority of the Commission to site the Blue Ridge Project where it is proposed to be built and to require that the power produced at the proposed Project be transmitted to the Jacksons Ferry Substation [near Foster Falls]. Virginia also acknowledges that the selection of the types of facilities required to transmit the power from the Project to the Substation is exclusively within the jurisdiction of the Commission.
>
> The question on approval of the routing of the transmission lines, on the other hand, is not whether or how the lines will be built, which is a matter for determination by the Commission, but rather a question of what course the lines shall take between the two designated points. This latter question is a matter of land use control which Virginia submits is within its exclusive jurisdiction. In view of the foregoing, Virginia submits that there is no conflict between the . . . [pertinent provision] of the Code of Virginia and the provisions of the Federal Power Act. The *Licensee should be required, as a condition of any license granted, to provide certification to the commission that it has complied with the applicable laws of Virginia which regulate the routes of transmission lines* prior to the commencement of construction of those lines. (Va. Br. on Excep., Feb. 25, 1974, pp. 8-9, Emphasis supplied.)

The foregoing argument presents us with a difficulty. Few legal principles under the Federal Power Act are better established than is the principle that we *cannot* require the kind of condition Virginia here seeks. The Supreme Court announced in 1946, in *First Iowa Coop. v. Power Comm'n*, 328 U.S. 152, 164, that

> To require the petitioner [an applicant for a hydroelectric license] to secure the actual grant to it of a state permit under § 7767 [of the Code of Iowa] a condition precedent to securing a federal license for the same project under the Federal Power Act would vest in the Executive Council of Iowa a veto power over the federal project. Such a veto power easily could destroy the effectiveness of the Federal Act. It would subordinate to the control of the State the "comprehensive" planning which the Act provides shall depend upon the judgment of the Federal Power Commission or other representatives of the Federal Government.

So, while Virginia asserts that we do not have jurisdiction, we agree with the Staff, which says that we do. We understand that Virginia is concerned with land use within its borders, and we are sympathetic to that concern. But we cannot defer to Virginia's position on this question without simultaneously doing violence to our jurisdiction under the Federal Power Act, as construed by the Supreme Court. In the circumstances, we must ourselves establish the routing of these transmission lines. We do so by approving the routes as generally shown in the Final Environmental Impact Statement.

(10) CITY OF DANVILLE

The City of Danville, Virginia, is an intervenor in this proceeding. Danville owns its own municipal electric system—the oldest in the nation—and it generates, transmits, distributes and sells power to customers within and just outside its city limits. Danville's service area abuts Appalachian's, with whom it is interconnected at two points and from whom it buys power to meet a portion of its needs.

In this licensing proceeding, Danville does not oppose construction of the Blue Ridge project. Instead, it asks us to do two things: (1) It asks that we condition the license to Appalachian so that there will be allocated to Danville 25 megawatts of power from the Blue Ridge project, in return for which

Danville would pay a proportionate share of the project costs ($3,858,000, based on the estimated project cost of $297,000,000 at the time of the 1969 Initial Decision) and of the annual operating costs ($229,620, 1969 estimate), and (2) it asks that we condition the license further to require Appalachian and its parent to refrain from interfering in and financing opposition to bond referenda in Danville.

Judge Levy was unwilling to impose either condition. We think he was right.

As to the first proposed condition, we do not now question Danville's need for 25 megawatts of power, but we do question the wisdom of its obtaining it through part ownership of the project. If the project were to be operated so as to meet this need of Danville, the proposed operating cycle would require a marked change, for as explained early in this Opinion, it is expected that the project will generate power only Mondays through Fridays and that the weekends will be devoted to pumping so as to restore the upper reservoir level. Changing the cycle to meet Danville's needs would require weekend generation, and would thereby diminish the project's power capability. In so doing, it would adversely affect the project's economic feasibility. Apparently in recognition of this problem, Danville has stated that Appalachian and AEP should be authorized to "operate the project" (Danville Ans. Br., 1969, p. 4). But if that were done, Danville would need yet another source of supplemental power, and its total power bill would grow proportionately—even though Danville's witness suggested that Danville, having paid a share of Blue Ridge project costs, would be unwilling to pay for supplemental power from other Appalachian generating sources (Tr. 4417). In these circumstances, the Staff argues that AEP system power, not Blue Ridge project power, is the answer to Danville's needs, and we think that is the correct conclusion.

Appalachian has expressed a willingness to meet Danville's needs for bulk power on a nondiscriminatory basis (e.g., see

Appalachian's 1969 Br. Oppos. Excep., p. 19). In view of this expressed willingness and in view further of our authority to require interconnections when the public interest requires, we take the view that Danville's needs can be fully met without our requiring joint ownership of the project. Such a joint ownership arrangement would, at a minimum, needlessly complicate construction, operation and maintenance of the project. Additionally, the arrangement is not necessary because Danville's requirements can be met more effectively through other means.

We do not think it helpful or desirable to add to the license the condition proposed by the Staff (proposed Article 54, 1969 St. Br. on Excep., p. A-2), which would require Appalachian to make 25 megawatts of system power available to Danville. Appalachian has asserted that it will cooperate with Danville. If it does not, Danville has remedies available to it under the Federal Power Act. Inasmuch as Danville is but one of many municipal customers of Appalachian, we think we would be unfairly discriminating in Danville's favor if we were to impose the article proposed by the Staff.

Turning, then, to Danville's complaint concerning Appalachian's political activities, here, too, we are unwilling to impose the license condition that Danville seeks. Danville says that Appalachian and AEP, its parent, have violated section 10(h) of the Federal Power Act, and it asks that the Blue Ridge license require that they cease doing so, i.e., that they "cease and desist in their efforts to limit the output of electrical energy, restrain trade and to fix and maintain or increase prices for electric energy in the Danville area, that they henceforth desist from interferance [sic] seeking by political or other means to prevent additions to Danville's electric system" (Danville Br. on Excep., 1969, p. 12).

Section 10(h) provides that licenses for water power developments shall be issued by us on the condition

> (h) That combinations, agreements, arrangements, or understandings, express or implied, to limit the output

of electrical energy, to restrain trade, or to fix, maintain, or increase prices for electrical energy or service are hereby prohibited.

The gist of Danville's complaint is that Appalachian and its parent, by participation in bond elections, have sought to prevent Danville from increasing its bonded indebtedness, and in so doing they have precluded Danville from obtaining the capital necessary for expanding its municipal generating capacity. They have, it is said, conducted a campaign of untruths, so as to defeat bond referenda in Danville.

We do not believe that section 10(h) was intended to vest in us the power to inhibit political activity. That is what we would be doing, if we were to impose the condition that Danville seeks. There is no question but what Appalachian has played an extremely active role in Danville's bond elections. The Presiding Judge accurately summarizes that role. But we do not understand that Danville is charging Appalachian with a violation of election laws. If it were, our answer would be that its remedy lies elsewhere.

There is no bar in the Federal Power Act to political activity and political expenditures by public utilities regulated by us. We have required that political expenditures be accorded particular accounting treatment (see our Order No. 276, December 18, 1963, 30 FPC 1539, which requires that political expenditures be accounted for "below the line", as nonoperating expenses, thereby providing the basis in rate proceedings for such expenses to be borne by the shareholders and not by the consumers. We have also instituted section 206 investigations into political expenditures by various utilities to assure that ratepayers' funds are not utilized for proscribed purposes.) But in so doing, we have made clear that our purpose is to stay out of the business of censorship and prior restraint (*Alabama Power Company, et al.*, 24 FPC 278, 290, affirmed sub nom. *Southwestern Electric Power Company* v. *F.P.C.*, 304 F.2d 29 (1962), cert. denied, 371 U.S. 924; 30 FPC at 1541). There is

nothing in this record nor in the briefs to persuade us that we should not continue to stay out of that business. We neither approve of Appalachian's political activities, nor do we disapprove of them. We merely refrain from imposing a legal restraint.

(11) ENVIRONMENTAL CONSIDERATIONS

(a) *Procedural*

From the moment the National Environmental Policy Act became law on January 1, 1970, it has been entirely clear that that Act (hereinafter NEPA) applies to this proceeding. Indeed, we would be hard pressed to imagine a more "major" action by this Commission "significantly affecting the quality of the human environment". To all such actions NEPA applies.

In connection with such major actions, section 102(2)(C) of NEPA requires the preparation of a detailed environmental impact statement. Our own regulations (Order No. 415-C, issued December 18, 1972) and many court decisions of recent years (e.g., *Calvert Cliffs Coordinating Com.* v. *A.E.C.*, 449 F.2d 1109 (1971); *Scenic Hudson Preservation Conference* v. *F.P.C.*, 453 F.2d 463 (1971), cert. denied 407 U.S. 926 (1972); *Greene County Planning Board* v. *F.P.C.*, 455 F.2d 412 (1972), cert. denied 409 U.S. 849 (1972), provide guidance as to the nature of that statement and the purposes it is to serve. We are confident that the procedural requirements of NEPA, as construed by the courts, have been fully met in this proceeding, for the Staff and the Presiding Administrative Law Judge have been scrupulous in their deference to those requirements.

Long before NEPA was enacted, however, this proceeding was concerned with environmental implications. Indeed, a review of the 7,500 pages of hearing transcript shows that this case has in very large measure constituted from the outset an examination of environmental benefits and detriments. But with NEPA's enactment, the exploration of environmental implications became structured in a way that was intended to meet the requirements of the statute.

In January, 1971, Appalachian filed an environmental statement, as was required by our regulations then in force (Order No. 415, issued December 4, 1970). That statement was sent to the Council on Environmental Quality and to other pertinent public agencies, as well as to all parties of record. On April 12, 1971, certain intervenors, the Congress for Appalachian Development and the Appalachian Research and Defense Fund, also filed an environmental statement, which was contained in its brief to the Administrative Law Judge and which took the form of an answer to Appalachian. The Commission Staff on April 21, 1971, filed its own lengthy environmental statement as part of its brief, and that statement, which had been served upon all parties, was also transmitted to the Council on Environmental Quality. In his Supplemental Initial Decision of June 21, 1971, the Presiding Judge gave extensive attention to environmental matters, particularly in the portion of his decision entitled "Additional Findings, Conclusions and Environmental Statement" (pp. 27-60).

As we indicated early in this Opinion in our recital of the history of this proceeding, we concluded in November, 1972, that the foregoing actions were insufficient to fulfill NEPA's requirements. We thereupon remanded the case for further hearings, so that cross-examination could be conducted with respect to the Staff environmental statement and so that the *Greene County* requirements could indisputably be met. We indicated that we would accept Appalachian's statement of January 1971 as constituting the required report by an applicant on environmental factors; and we further indicated that we would accord to the Staff environmental statement of April 1971, the status of a Draft Environmental Impact Statement. We provided, however, that the Staff might modify that statement, if it chose to do so.

The Staff did choose to do so, and after revising the original statement, the Staff issued its Draft Environmental Impact Statement on January 23, 1973. That statement was distributed to all parties of record and to all interested Federal,

State, regional, and local agencies. The availability of the statement was made known through notice in the Federal Register, and copies were made available for public inspection. As a result, comments from 22 sources (parties, government agencies, and interested individuals) were received. As our procedures require, the Staff then revised the statement in light of such comments, and the Final Environmental Impact Statement was issued on June 18, 1973. All of the comments received are contained in the Final Statement (pp. 302-517), and a report on the actions taken by the Staff as a result of such comments also appears therein (pp. 87-126). Seven Staff witnesses who participated in the preparation of the Impact Statement were made available for cross-examination at the hearings that were held in July.

As we read the exceptions filed with respect to the Additional Supplemental Initial Decision of January 23, 1974, none casts substantial doubt upon the proposition that the procedural requirements of NEPA have been met. We are confident that they have been.

(b) *Substantive*

The parties are by no means uniformly of the view, however, that the Final Environmental Impact Statement is acceptable in terms of substance, or that environmental impacts have been properly assessed by the Administrative Law Judge. Several intervenors have filed exceptions that take issue with the completeness of the Statement. We think these exceptions are not well taken. We concur with Judge Levy's view

> . . . that Staff has made a detailed, comprehensive environmental impact analysis and statement that fully complies with the requirements of NEPA and the Commission's regulations. (Add. Supp. In. Dec., p. 8).

We also agree with his view that the exceptions of these intervenors

> . . . indicate continuing disagreement with Staff's findings

and conclusions rather than the alleged inadequacy or insufficiency of Staff's analysis. (Ibid.)

Our examination of the Final Environmental Impact Statement, and of the exceptions that have been filed that relate to it, indicate that no subsantial doubt has been cast upon its factual accuracy. As for its completeness, we would observe that no environmental statement filed in a proceeding involving controversial issues is likely to escape the charge of incompleteness. As the Court of Appeals for the Second Circuit stated in the second *Greene County* case, 490 F.2d 256, 258 (1973), "There will scarcely be an EIS [Environmental Impact Statement] filed which will not appear to some party to be deficient according to his point of view." We think the Final Environmental Impact Statement before us is as complete as we could reasonably expect and that it is acceptable as a matter of law.

Before turning to a discussion of particular exceptions pertaining to environmental considerations, we observe that no exceptions to the Additional Supplemental Initial Decision have been filed by the Environmental Protection Agency. The EPA commented at some length on the Staff Draft Statement (see FEIS, pp. 323-334), but it did not participate in the hearings last July, nor has it since filed briefs before the Presiding Judge or exceptions with us. After the conclusion of the hearings, however, EPA offered comments on the Staff's Final Statement, and the Administrative Law Judge responded to those comments in his January 1974, decision. We adopt that response. (Add. Supp. In. Dec., pp. 12-15.)

EPA's two objections that seem to us most serious, and on which we offer further comment, relate to the air pollution that Blue Ridge would cause, and the concern EPA (and others, including ourselves) feel in connection with the elimination of a free-flowing river. As to air pollution, EPA doubts that Blue Ridge would contribute less than would an alternative, coal-fired facility. We are persuaded that Blue Ridge

would contribute less. When the conventional portion of the hydroelectric capacity of Blue Ridge is taken into account, along witht the fact that Blue Ridge pumping energy will generally be supplied by the most efficient of the AEP plants, there can be no doubt that Blue Ridge would require the consumption of less coal, and thus the emission of fewer air pollutants over its 50-year life, than would an alternative coal-fired plant of equal capacity. In addition, Blue Ridge would have the additional effect of reducing emissions from existing plants of the AEP system. The record abundantly supports these conclusions.

As for the elimination of a free-flowing river, and the substitution for it of sizeable, flat lakes, we cannot do otherwise than share in the regret. We do not authorize the project because our regard for rivers and streams is incomplete, but because we find it necessary to balance that regard with the need for the benefits that the project would create. As we have stated, in light of those benefits, it is our judgment that this project is "best adapted to a comprehensive plan for improving or developing" this waterway, and it thus meets the test of section 10(a) of the Federal Power Act. Under the license we grant, the New River would not, of course, be eliminated. Some 70 miles of it would be inundated, but 150 miles would remain. And the portion that would be inundated would very largely become a recreation area of great beauty and great value. We do not welcome change for its own sake, but we countenance it and indeed encourage it in this case, for we think the public interest, on balance, will be well served.

We turn, then, to the principal remaining exceptions that relate to environmental matters. (Many such exceptions have, of course, already been dealt with in this Opinion, for as we have pointed out, most of the issues, whether labeled "Drawdowns" or "Flood Control" or something else, have environmental implications.)

—Grayson County excepts on the ground that, notwith-

standing the elimination of both water quality control storage and 186,000 acre-feet of flood control storage, the size of the Blue Ridge upper reservoir has not been reduced by the Administrative Law Judge. We believe the Administrative Law Judge's conclusion was correct. The size of the upper reservoir has not been reduced because, as we have earlier explained, its size is necessary for power purposes. A smaller reservoir would lessen the project's generating capability, because it would lessen the available head. In fact, however, the upper reservoir had not in any event been foreseen as the site for water quality control storage or flood control storage as such.

—The State of North Carolina argues that, given the gasoline shortage, the recreation facilities of Blue Ridge will be greatly reduced in value, for their accessibility will be threatened. We will refrain from offering predictions as to the future availability of gasoline and the impact on visitation, for that particular shortage is not within our jurisdiction. We would observe, however, that the recent gasoline shortage coincided in time with North Carolina's exceptions, which were dated February 27, 1974, and filed March 4, and that the situation has improved since that time. More importantly, we are here dealing with a project carrying very long-term implications. Recreational facilities will unquestionably be much in demand throughout the project's life, and American ingenuity will, we are confident, provide methods of getting to them.

—Ashe and Alleghany Counties join Grayson County in contending that proper provisions have not been made for alleviating the hardship that will be created in the lives of those people who must move off the project site. We think adequate provision has been made. We do not minimize the extent of human distress that dislocations and relocations of the kind here involved cause. We know that many individuals, numbering about 2,700, will be at the very minimum inconvenienced. (Appalachian's latest figures show that 586 families, 337 in Virginia and 249 in North Carolina, will be forced to move. Br. Oppos. Excep. March 14, 1974, p. 15). We understand their displeasure, for we know that many will be forced to abandon property held by their families for generations, and all of them will encounter hardship in some measure. The license we grant requires that those hardships be reduced as fully as we think feasible. All property owners would, of course, be paid just compensation for the property taken. Appalachian now holds some parcels in areas that will not be inundated, and these parcels will be available for exchanges—56 parcels with 48 habitable dwellings. Appalachian is required by Article 55 of the license to establish a relocation service and to give reasonable financial assistance to help in the relocation of those displaced, using the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 as a guide. That Act provides for financial assistance in connection with moving expenses, personal property losses, and increased mortgage-interest costs, among other things. Appalachian must report to us annually on its program. Appalachian has also agreed to fund up to one-half of the cost of a Relocation Housing Needs Study, to be undertaken by a North Carolina planning firm at the request of Ashe and Alleghany Counties; and it has agreed to participate in the same manner with Grayson County if it undertakes a similar study. The foregoing requirements will not we know, eliminate distress, but we think they will alleviate it as fully as we can reasonably require.

—Grayson County alleges that environmental impacts have not been assessed with respect to road relocations because final plans have not been made. It is true that final road relocation plans have not been made. We point out, however, that the record shows precisely what roads will require relocation (e.g., FEIS, App. E); that Appalachian will be required to pay relocation costs, estimated at about $35 million for all such roads—62 miles of primary roads and 54 miles of secondary roads; that the beneficial impacts of a new and greatly improved road system are assessed in the Environmental Impact Statement; and that final road plans have not been made because they must be the product of extensive consultation

with all pertinent government agencies, and of public hearings within the States on the question of location.

—Congressman Mizell and the State of North Carolina join in excepting on the ground that alternatives to the project have not been considered. We submit that the study of alternatives has been exhaustive. We call attention to several summaries of those studies: the Supplemental Initial Decision, pages 22-24; the Final Environmental Impact Statement, pages 73-80; the Additional Supplemental Initial Decision, pages 10-11, 14-15. We will not undertake a summary of those summaries, except to say that every conceivable alternative has been explored and assessed, including alternative sites, alternative sources of supply, alternative kinds of projects and the alternative of no project at all. We join the Staff and the Administrative Law Judge in concluding that in terms of environmental consequences, no alternative to the Modified Blue Ridge Project licensed herein would be as acceptable from an environmental standpoint.

We conclude that, on the basis of this massive record, the adverse effects upon the environment that the Blue Ridge Project would cause are both numerous and substantial, but we also conclude that they are more than balanced by the environmental benefits that would be created. A free-flowing stream would be partially lost; 2,700 people would be forced to move; close to 40,000 acres of handsome, rolling countryside would be inundated. All of these consequences, and more, are considered in depth in the Environmental Impact Statement. But simultaneously, electric power would be produced—power that is and will be sorely needed by American consumers for the purpose, among many others, of improving the environment. A recreation area of sizeable proportions and great attractiveness would be created—an area much needed in the eastern portion of the United States. Essential flood control would be provided, and flow augmentation of the New River would encourage economic growth in an area that needs

it. In our judgment, the Blue Ridge project would contribute much more than it would take away.

(12) PARTICULAR LICENSE PROVISIONS

Several of the parties take exception to particular provisions of the license, as set forth in the Initial Decision and its successors. We shall here deal with such of these exceptions, not discussed above, as remain pertinent. Thereafter we will explain the few remaining changes of substance that we have made in the license as recommended in the Additional Supplemental Initial Decision. The most important of our license changes have been discussed earlier.

—Appalachian fears that Article 47 of the Presiding Judge's Decision may delay project construction. That article requires a multiparty ecological study, such study to include, among other things, "limnological studies for the optimum design and placement of the project intake structures." Appalachian is concerned that a decision respecting intake structures, which are central to the design of the facility, will be delayed until the full Article 47 study is completed. Both the Staff and Interior argue that that result need not follow, and we agree. We have, in any event, modified Article 47 somewhat. We believe that the matter of intake structures can be considered and resolved, under the language of the new Article 47, in advance of other matters to be considered in the study.

—Also in connection with the limnological studies, Virginia states in its exceptions that Article 47 is deficient because it does not require the inclusion in the studies of the downstream New River; it imposes no deadline for completion of the studies; and the Virginia State Water Control Board is not recognized as a participant. In our revised Article we believe that Virginia's first concern is now met. As in the original Article 47, the State agency is not named as such, but it is comprehended by the reference to "the appropriate fishery and water quality agencies of Virginia, West Virginia, and North Carolina". As to a deadline, one is implicitly imposed in con-

nection with intake structures. Beyond that, we are not disposed to impose a general deadline with respect to all aspects of these studies because we fear that doing so might hamper the conduct of the studies and jeopardize the usefulness of their results.

—Article 38 requires certain hydraulic model studies. Virginia asks that these studies be completed prior to the commencement of construction, and that the Virginia State Water Control Board participate in them. We have revised Article 38 to make these points explicit.

—The Staff and Virginia both take exception to the language of Article 51 (e), which provides that rates of flow increase and decrease below the lower dam shall not "exceed prescribed standards". They rightly complain that the phrase is undefined. The Staff had recommended a limitation of 2 feet vertically per hour, in order to protect the river bed and aquatic life downstream. Appalachian opposes a particular limitation, believing that flexible project operations require that this matter remain open, at least until hydraulic model studies are completed. We agree with Virginia and the Staff. In the interest of protecting the river, we think that this much precision now would be helpful. If 2 feet vertically proves unsound, the limitation can be changed, following notice and an opportunity for hearing.

As to other license provisions, we have added language in two places in Paragraph (B) (ii) (2), where a comparison with the comparable language in the Supplemental Initial Decision suggests that the omissions resulted from oversight. We have deleted certain language from Article 36, pertaining to environmental protection measures, inasmuch as the subject is fully covered in Article 45. We have revised rather extensively Article 37, pertaining to the Board of Review, in order more specifically to provide for its role, and in order to assure that its members "have not participated substantially in the design of the proposed project works". Finally, in Articles 46 and 51

we have deleted the requirement that the Licensee "shall enter into an agreement with the Corps of Engineers", and have instead provided that the Licensee "shall cooperate with the Corps of Engineers in an effort to reach a mutually satisfactory agreement". We really have no doubt that Appalachian and the Corps will come into agreement without difficulty. (Articles 46 and 51 provide machinery for a solution if they do not.) But it seems inappropriate in principle for us to direct any party to enter into an agreement, for mutuality would thereby be foreclosed.

(13) OTHER EXCEPTIONS

We shall deal in a more summary manner with the principal remaining exceptions.

—The Commonwealth of Virginia argued, following the Judge's 1969 Initial Decision, that we are without jurisdiction in this case because it involves a controversy between sovereign States, and as such it must be resolved in the judicial branch under Article III of the Federal Constitution. One answer is that a conflict between the States may no longer exist, in light of later developments in this proceeding. A fuller answer is that there is here involved a navigable water of the United States (29 FPC 445 (1963)), over which the Congress has jurisdiction under Article I of the Constitution. And the Congress, by enacting the Federal Power Act, has empowered this Commission to license hydroelectric generating projects on navigable waters. Moreover, because power from the project will be transmitted in interstate commerce, our jurisdiction is doubly secure. *F.P.C.* v. *Union Electric Company*, 381 U.S. 90 (1965). This is not primarily a conflict between the States under Article III, although they have sometimes appeared to be in conflict. It is primarily a licensing proceeding, deriving from the legislative power under Article I.

—The Staff takes exception to the statement that "No alternative site or source would provide the needed power more economically" (In. Dec., p. 6) on the ground that, viewed

solely from the standpoint of the production of power, other sites would provide power at lower costs. We agree. But when the non-power purposes of the project are taken into account, along with their direct and indirect economic benefits, the Modified Blue Ridge Project becomes the most economically attractive alternative.

—Exception is taken in two connections to the Presiding Judge's handling of particular testimony. Appalachian argues that testimony by a witness for Danville, which was admitted as Exhibit 230, is objectionable, essentially on the ground that it states legal conclusions, and it further argues that the Presiding Judge ought, therefore, to have ruled on Appalachian's motions to strike. Inasmuch as the Judge observed at the time he received the exhibit that the admission of "a particular exhibit as evidence doesn't indicate any evaluation as to its weight and probative value" (Tr. 4449), and inasmuch as Appalachian has been in no way prejudiced by the exhibit, we do not think Appalachian's point is well taken. On the other hand, the Congress for Appalachian Development and the Appalachian Research and Defense Fund argue that the Judge should have admitted as evidence a statement by Senator Lee Metcalf. The Judge, referring to it as a statement of position, directed that the Senator's statement be copied into the transcript (Tr. 6494), and it there appears (Tr. 6495-6503). As a statement of position, the testimony is not accorded the status of evidence. Inasmuch as an examination of the statement indicates, however, that it deals in general with the value of Federal hydroelectric development and does not deal with the immediate project specifically, we think the Presiding Judge's treatment of it was correct.

—The Congress for Appalachian Development and the Appalachian Research and Defense Fund also fault the Presiding Judge for giving "short-shrift . . . to the issue of the anticompetitive effects of the Project" (Br. on Excep., 1971, p. 16). They rightly point out that we are required to weigh anti-trust considerations. We think the Judge gave adequate

attention to the point when he observed in his Supplemenal Decision,

> No competing application has been filed and, rather than having any anti-competitive effect, the project will benefit the entire region served by the AEP system in lower costs of generation, greater system reliability and flexibility for intersystem coordination—all subject to the continuing authority of and regulation by the Federal Power Commission. (p. 21)

—Congressman Mizell has filed an exception of particular consequence, pointing out that legislation now pending in the Congress would require further study of the pertinent portion of the New River before the Blue Ridge project could be licensed (Br. on Excep., March 5, 1974, p. 4). We take official notice of the action of the Senate of the United States on May 28, 1974, in passing S. 2439, which designates the portion of the New River where the Blue Ridge project would be located as a subject for study as a potential component of the National Wild and Scenic Rivers System (120 *Cong. Rec.* 9077, daily ed.); and of the fact that hearings were held June 3, 1974, by the Subcommittee on National Parks and Recreation, House Committee on Interior and Insular Affairs, on similar legislation (120 *Cong. Rec.* D627, daily ed.).

The pending legislation does not, of course, relieve this Commission of the responsibility or the authority to act upon the application before us. Only an Act of Congress could do that. Legislation that would affect this project, either by delaying or foreclosing it, has in fact been pending in the Congress for many years. Notwithstanding that fact, we have not been deterred from moving this case forward, and we do not think the pendency of legislation should preclude us from acting now. So long as the Federal Power Act imposes upon us the duty "of assuring an abundant supply of electric energy throughout the United States", and so long as the Act vests in us the responsibility to issue licenses for hydroelectric

projects, we shall regard it as our duty to discharge that responsibility—unless or until inhibited by Act of Congress. For us to do less would constitute a dereliction of our duty under present law.

But we are mindful of the Senate's action, and we are aware that the House of Representatives may take similar action this year. While we are persuaded that the Blue Ridge project is necessary now, and while we therefore hope that it will not be delayed or foreclosed by Congressional action, we are not disposed ourselves to act in a way that would, at a minimum, complicate the legislative process. Accordingly, we shall impose an effective date on the license herein granted of January 2, 1975. That will afford the 93d Congress an opportunity to act on this matter. If by that date an Act of Congress exists that would foreclose or delay the Blue Ridge project, then the license we herein grant will be of no effect. If there is no such Act of Congress by that date, the license herein granted will become effective, unless otherwise delayed by judicial review.

In the meantime, we shall cause this record to remain open, so that, if legislation similar to S. 2439 is passed, and if, following a 2-year study, it is concluded that the pertinent stretch of the New River should remain available for hydroelectric licensing, it will not be necessary for the Applicant to begin absolutely anew.

A number of *ex parte* communications have been received by the Secretary of the Commission from members of Congress, not intervenors herein, concerning the pending legislation and urging that we stay any further action until Congress has had an opportunity to act. Senators Haskell, Helms, Ervin, and Jackson and Congressman Haley are among them. We are instructing the Secretary to serve copies of all such communications on all parties of record in this proceeding, following which the communications will be made a part of the formal record herein.

Given the number of briefs that have been filed in this

long and complex proceeding, we are aware that, notwithstanding this overlong opinion, we have not dealt explicitly with all of the exceptions that have been filed. Moreover, as to those exceptions that we have discussed, we could, perhaps surprisingly, have said much more. We count 13 rounds of briefs that have been filed in connection with the Initial Decision, the Supplemental Initial Decision, and the Additional Supplemental Initial Decision alone. Many more have been filed in connection with the almost countless motions, petitions, and other filings that have been before us in this case over the years. We have here undertaken to discuss the issues and the exceptions that seem to us the most important. Those exceptions that we have not discussed we deny. The very helpful decisions of Administrative Law Judge Levy we adopt, except to the extent that they are inconsistent with what we have said herein.

The Commission further finds:

(1) The Applicant, Appalachian Power Company, is a corporation organized under the laws of Virginia.

(2) The Applicant has submitted satisfactory evidence of compliance with all applicable state laws insofar as necessary to effectuate the purposes of the license for the modified project.

(3) Public notice of the filing of the application and the amended application for the modified project has been given. No conflicting application is before the Commission.

(4) The Applicant has submitted satisfactory evidence of its financial ability to construct and operate the modified project.

(5) The modified project would be located on a navigable water of the United States.

(6) The Chief of Engineers reported by letter dated September 25, 1968, that the plans for the modified project are

satisfactory insofar as the interests of navigation are concerned.

(7) The estimated cost of the modified project compared with the estimated cost of developing appropriate alternative sources of power is reasonable.

(8) The issuance of a license as hereinafter provided will not affect the development of any water resources for public purposes which should be undertaken by the United States.

(9) An allocation of power from the proposed project as requested by the City of Danville, Virginia, would result in an absence of benefits to Danville and a detriment to the Applicant.

(10) The installed horsepower capacity of the project hereinafter authorized for the purpose of computing the administrative annual charge is 2,400,000 horsepower, and the amount of annual charges based on such capacity to be paid under the license for the project, for the costs of administration of Part I of the Act, is reasonable.

(11) The power to be produced by the project can be utilized on and is needed by the American Electric Power System of which the Applicant is a part.

(12) Subject to the terms and conditions hereinafter imposed, the project will be best adapted to a comprehensive plan for improving or developing a waterway or waterways for use or benefit of interstate or foreign commerce, for the improvement and utilization of water power development and for other beneficial public uses, including recreational purposes.

(13) There are three properties listed in the National Register established under the provisions of Public Law 89-665 (80 Stat. 915) in the vicinity of the project, but they would not be significantly affected by it.

(14) The low flow augmentation provided for herein should have no detrimental effect downstream.

(15) Further limnological studies of the proposed project reservoirs, including heat budget studies, should be made for the optimum design and placement of the intakes of the project.

(16) The project will change the present aquatic habitat of the New River in the area to be inundated from a stream-type to a reservoir or lake-type.

(17) The size of the reservoirs of the project provides for substantial flexibility for project design and for project operation in the future.

(18) The project will provide desirable public benefits in terms of reliable power supply, flood control, low flow augmentation, recreational development, fishing opportunities in the project reservoirs and downstream and potential water supply.

(19) The project will complement and enhance existing and planned recreational and scenic areas in the vicinity of the project.

(20) The amount of low flow augmentation for fishing and recreation purposes provided for herein would have a beneficial effect downstream; further studies should be made to monitor and assess the downstream effect of such low flow augmentation before additional low flow augmentation is made from the project.

(21) Provision for multi-level intakes should be made if required to provide flexibility in controlling temperatures of water released from the lower development.

(22) The project will help to maintain an environment that supports diversity and variety of individual choice.

(23) Low flow augmentation from the project should not be used as a substitute for adequate treatment of other methods of controlling wastes at the source.

(24) The procedures followed in this proceeding have been

in compliance with the National Environmental Policy Act and our regulations pursuant thereto.

(25) The Final Environmental Impact Statement fully complies with the requirements of the National Environmental Policy Act and our regulations pursuant thereto.

(26) The Initial Decision of the Presiding Examiner, issued on October 1, 1969, the Supplemental Initial Decision issued on June 21, 1971, and the Additional Supplemental Initial Decision issued on January 23, 1974, should be adopted to the extent not inconsistent with this Opinion.

(27) All exceptions not granted should be denied.

The Commission orders:

(A) This license is hereby issued to the Appalachian Power Company (Licensee) of Roanoke, Virginia, under Section 4 (e) of the Federal Power Act (Act) for a period of 50 years, effective on the first day of the month in which the license order is issued, for the construction, operation and maintenance of the proposed Blue Ridge Project No. 2317, to be located on the New River in Wythe, Carroll and Grayson Counties, Virginia, and Ashe and Alleghany Counties, North Carolina, subject to the terms and conditions of the Act, which are incorporated herein by reference as part of this license, and subject to such rules and regulations as the Commission has issued or prescribed under the provisions of the Act.

(B) The Blue Ridge Project No. 2317 will consist of:

(i) all lands constituting the project area and enclosed by the project boundary or the Licensee's interest in such lands, the limits of which are otherwise defined, the use and occupancy of which are necessary for the purposes of the project; such project area and project boundary to be described by certain exhibits which are to be filed pursuant to Articles 36 and 43 herein, and by the following designated and described exhibits which were filed as part of

the application for license and which are designated and described as follows:

Exhibit J: (Hearing Exhibit No. 151) entitled "Location Map and Drainage Area", approved only insofar as it shows the general location of the project.

Exhibit K: (Hearing Exhibit No. 146) entitled "Upper and Lower Project Area", approved only insofar as it shows the general location of the project.

(ii) project works consisting of:

(1) The Upper Development comprising (a) a reservoir having a surface area of approximately 26,000 acres at water surface elevation 2,652 feet containing about 2,010,000 acre-feet of storage; (b) a rock-fill dam about 300 feet high and 1,500 feet long constructed across the New River; (c) a spillway with crest at elevation 2,602 feet controlled by four Tainter gates each 50 feet wide by 50 feet high; (d) a gated intake works; (e) eight concrete lined tunnels each 31 feet in diameter; (f) a powerhouse containing 1,600,000 kw of generating capacity in eight reversible units each rated 200,000 kw at 230-foot net head; transmission lines consisting of two 31-mile 765,000 volt single circuits from the upper development to a switching station to be located near Foster Falls, Virginia, on a 765,000 volt transmission system; and appurtenant facilities; and

(2) the Lower Development comprising (a) a reservoir having a surface area of 12,390 acres at elevation 2,432 feet containing about 1,061,000 acre-feet of storage; (b) a rock-fill dam about 236 feet high and about 2,000 feet long constructed across the New River; (c) a spillway with crest at elevation 2,382 feet controlled by four Tainter gates each 50 feet wide by 50 feet high; (d) an intake integral with the dam near the right abutment; (f) a powerhouse containing 200,000 kw of generating capacity

in two conventional units rated 100,000 kw each at 204-foot net head; transmission lines consisting of a 5.6-mile 138,000 volt double circuit line from the lower development to a switching station to be located near Fries, Virginia, on the 138,000 volt transmission system; and appurtenant facilities:—the location, nature and character of which are more specifically shown and described by the exhibits hereinbefore cited and by certain other exhibits which also form part of the application for license and which are designated and described as follows, except that the Exhibit L Sheets do not now accurately reflect the reduced capacity of the lower reservoir and are to be revised in accordance with this license:

Upper Development

Exhibit L	*Hearing and Exhibit No. and FPC No.*	*Showing*
Sheet 1	148, 2317-14	Plan and Section
Sheet 2	148, 2317-15	Details and Cross Sections

Lower Development

Exhibit L	*Hearing Exhibit No.*	*Showing*
Sheet 1	149	Plan
Sheet 2	149	Details and Cross Sections

Exhibit M: (Revised June 1968) consisting of 6 typewritten sheets entitled "General Description of Equipment", filed June 14, 1968. (Note: The Exhibits L and M are approved only insofar as they show and describe the general scope of the project).

(iii) all other structures, fixtures, equipment or facilities used or useful in the maintenance and operation of the project and located on the project area, including such portable property as may be used or useful in connection with the project or any part thereof, whether located on or off the project area, if and to the extent that the inclusion of such property as part of the project is approved or acquiesced in by the Commission; also, all riparian or other rights, the use or possession of which is necessary or appropriate in the maintenance or operation of the project.

(C) This license is also subject to the terms and conditions set forth in Form L-4 (Revised November 1, 1968) entitled "Terms and Conditions of License for Unconstructed Project Affecting Navigable Waters of the United States" which terms and conditions, designated as Articles 1 through , are incorporated by reference and made a part hereof. This license is further subject to the following special conditions set forth herein as additional articles:

Article 31. The Licensee shall, in accordance with the provisions of Article 9, finance the establishment and operation of a gauging station on the North Fork of the New River at Warrensville, North Carolina, and shall do the same with respect to a gauging station on the South Fork of the New River near Jefferson, North Carolina.

Article 32. The Licensee shall retain a consultant for the purpose of making a geographical interpretation of the information contained in the Virginia Division of Mineral Resources Information Circular 12 entitled: "Magnetic and Radiometric Data, Southwest Piedmont of Virginia, 1966." Geophysical studies shall include the project area in Virginia and North Carolina.

Article 33. The Licensee shall, prior to commencement of construction, consult with the Smithsonian Institution to determine the extent of any archeological survey and salvage excavation that may be necessary prior to any construction activities and provide an amount not to exceed $7,500 for any needed surveys or salvage excavations to be conducted and

completed prior to construction and/or flooding, whichever is applicable.

Article 34. The Licensee shall cooperate with the appropriate State and local agencies in the identification of historical structures, if any, within the project area and, if necessary, cooperate in developing a plan for protection or relocation of such structures.

Article 35. The Licensee shall in accordance with the Commission's Rules and Regulations, submit revised Exhibit L drawings and a revised Exhibit M showing the final designs of the project works, and the Licensee shall not begin construction of any project structure until the Commission has approved the Exhibit L drawings and Exhibit M therefor. Prior to commencing construction, the Licensee shall also submit for information duplicate copies of contract bid specifications and accompanying drawings to the Commission's authorized representative.

Article 36. Prior to the start of construction of project transmission facilities, the Licensee shall file for Commission approval Exhibits J, K, and V, prepared in accordance with the Commission rules and regulations, showing plans for the construction of the lines on the approved right-of-way as generally shown in Appendix A-6 of the Final Environmental Impact Statement. The Exhibit V shall include plan and profile drawings, and an aerial mosaic of the right-of-way. Within one year from date of completion of the project, the Licensee shall submit a revised Exhibit F and, for Commission approval, a revised Exhibit K for the entire project.

Article 37. The Licensee shall retain a board of three or more qualified independent consultants, who have not participated substantially in the design of the proposed project works, to review the design, specifications, and construction of the project for safety and adequacy. Among other things, the board shall assess the geology of the project site and surroundings; the proposed design, specifications, and construction of the

dams, powerhouses, electrical and mechanical equipment involved in water control, and emergency power supply; the construction inspection program; and construction procedures and progress, as well as instrumentation and plans for surveillance, during initial filling of the reservoirs. The Licensee shall submit copies of the board's report on each meeting. Reports reviewing each portion of the project shall be submitted prior to or simultaneously with the submission of the corresponding Revised Exhibit L final design drawings. The Licensee shall also submit a final report of the board upon completion of the project.

Article 38. Prior to the submittal of revised Exhibit L drawings as required in Article 35, the Licensee shall, in cooperation with the water quality control agencies of the States of Virginia, West Virginia and North Carolina, conduct hydraulic model studies of the spillways and power plants including the New River immediately below the lower development to determine optimum design of such project works. The hydraulic model studies shall determine the effect on streamflow depth and velocity downstream of the lower development due to power plant discharge in order to develop a plan for the adequate protection of downstream life and property. Results of model studies shall be submitted promptly to the Commission.

Article 39. The Licensee shall install instrumentation and other devices for monitoring seepage, uplift and performance of the project structures and reservoir slopes. A plan of instrumentation and a schedule of recording instrument readings shall be furnished to the Commission prior to initial filling of the reservoirs. The Licensee shall furnish periodically to the Commission, as may be requested by the Commission or its authorized representative, a report and analysis of the instrument readings.

Article 40. The Licensee shall commence construction of the project works not later than two years after the effective date of the license and shall thereafter in good faith and with due

diligence prosecute such construction and shall complete construction of the project works within eight years from the effective date of the license.

Article 41. The Licensee shall pay, for the purpose of reimbursing the United States for the cost of administration of Part I of the Act, a reasonable annual charge as determined by the Commission in accordance with the provisions of its regulations in effect from time to time. The authorized installed capacity for such purposes is 2,400,000 horsepower.

Article 42. The Licensee shall, within one year from the date of issuance of the license, file for Commission approval, a revised plan for recreational development at the project. The plan shall be prepared, after consultation with appropriate Federal, state and local agencies, in compliance with Sections 4.41 and 4.42 of the Commission's Regulations under the Federal Power Act. The revised recreational development plan shall include adequate provisions for: (1) initial development, including schedules, consisting of: (a) overlook areas at both dam sites; two state parks on the upper reservoir, one in each state affected by the project; portages around both dam sites; and other lands; all as generally shown on hearing Exhibit No. 162; (b) nine major boat launching sites as generally described in hearing Exhibit Nos. 162 and 164, five at the upper reservoir and four at the lower reservoir; (c) two public access areas, one on each bank in the tailwater area, immediately downstream from the lower dam as generally described in hearing Exhibit No. 165; (d) a minimum of 21 additional access sites to be developed at the end of existing roadways terminating in the two reservoirs; and (e) recreational development on the islands in both reservoirs; and (2) future development, including schedules, of sites on the upper reservoir generally as shown on hearing Exhibit No. 162 and recreational development on the islands in both reservoirs.

Article 43. The Licensee shall acquire fee simple interest in and include within the project boundary as shown on Exhibit

K maps to be filed with the Commission: (1) all lands designated for recreational development during the term of the license, (2) all lands at the upper reservoir development to contour elevation 2,655 feet m.s.l., (3) all lands at the lower reservoir development to contour elevation 2,435 feet m.s.l., and (4) all islands created by both the upper and lower reservoirs when the water surfaces are at elevations 2,652 feet m.s.l. and 2,420 m.s.l., respectively. In addition, the Licensee shall acquire, and include within the project boundary, as shown on Exhibit K maps to be filed with the Commission, either a fee simple interest or scenic easements in (5) approximately 80 miles of upper reservoir shoreline, as shown on Exhibit No. 162, to extend to a horizontal distance of 200 feet from elevation 2,652 feet m.s.l., and (6) shoreline control of the remainder of the upper reservoir, to extend to a horizontal distance of 25 feet from elevation 2,652 feet m.s.l.: *Provided,* That where scenic easements are obtained in lieu of a fee simple interest, such easements shall include a provision for free public access, to a reasonable extent, to such lands for the purpose of full public utilization of the lands for recreational purposes; and *Provided, further,* That the Licensee shall be relieved of the acquisitions described in (5) and (6) hereof if the Commission determines that adequate local zoning laws exist and that they are adequately enforced, and the Licensee shall continue to be so relieved so long as such conditions continue to exist. The Licensee shall file with the Commission its first report on such subject at such time as it chooses, and it shall thereafter report at least annually. Other parties to this proceeding shall be afforded an opportunity to comment to the Commission on the Licensee's first report, and they may comment on any subsequent report on such subject filed by the Licensee. In determining the adequacy of local zoning laws, the Commission will be guided by the objective of achieving land use around the reservoir which is consistent with the optimum use of the project for public recreation purposes. Use of shoreline land must not "endanger health, create a nuisance, or otherwise

be incompatible with over-all project recreational use" (Order No. 313, December 27, 1965, 34 FPC 1546, 1559).

Article 44. The Licensee shall, prior to relocation or construction of any roads, bridges or transmission lines (other than transmission facilities which are part of the project) in connection with the construction, operation or maintenance of the project, consult with appropriate Federal, State and local agencies and shall prior to construction submit to the Commission its plans showing the proposed relocation or construction including vertical clearance of bridges and transmission lines and plans for the preservation and enhancement of the environment as it may be affected by the relocation or construction. In preparing these plans, the Licensee shall give appropriate consideration to the provisions of the Commission's Order No. 414, issued November 27, 1970. The Commission reserves the right, after notice and opportunity for hearing, to prescribe any such changes in the plans within the project boundaries as the public interest may warrant.

Article 45. The Licensee shall avoid or minimize any disturbance caused by construction and maintenance of the project works to the natural, scenic, historical and recreational values of the area, blending project works with the natural view, and revegetating, stabilizing, and landscaping any construction areas located outside the area of the project reservoirs. Within one year from issuance of this license, the Licensee shall submit to the Commission its detailed plan to avoid or minimize any disturbance to such values of the area caused by construction and maintenance of the project works; this plan, including an architectural rendering for the major project features including project transmission facilities, shall be prepared after consultation with professional land use planners and appropriate Federal, State and local agencies; and this plan shall give due consideration to the provisions of the Commission's Order No. 414, issued November 27, 1970. The Commission reserves the right after notice and opportunity

for hearing, to prescribe any such changes in the plans as the public interest may warrant.

Article 46. The Licensee, following consultation with the States of Virginia, North Carolina, and West Virginia, the Environmental Protection Agency, and the Department of the Interior, shall cooperate with the Corps of Engineers in an effort to reach a mutually satisfactory agreement for the storage and releases of water during the period of initial filling of the reservoirs of the project and shall promptly forward to the Commission a copy of the agreement reached: *Provided*, That the Commission on its own motion or at the request of any of the aforesaid participants or affected states may, after notice and opportunity for hearing, provide by order for the storage and releases of water during the period of initial filling of the reservoirs of the project.

Article 47. The Licensee, in the interest of preserving and developing the fishery resources of the project waters, and the area downstream thereof, shall consult and cooperate with the appropriate fishery and water quality agencies of Virginia, West Virginia and North Carolina and of the Federal Government, shall make or pay the cost of making limnological studies of the project reservoirs and downstream area, and shall file for Commission approval within six months from the date of issuance of this license a copy of a cooperative study plan. The study plan shall include heat budget studies of both reservoirs to determine the suitability of the reservoirs to support trout populations and to assist in determining the design and placement of the project's water intake structures so as to provide discharges of water with temperatures suitable for maintaining the downstream fish populations of the species to be selected by Virginia. Copies of quarterly progress and of final study reports shall be filed promptly with the Commission. The Commission after notice and opportunity for hearing reserves the right, either on its own motion or upon the recommendation of any of the above State or Federal

agencies, or the Licensee, to prescribe such modifications to the studies as may be necessary to accomplish the purpose of this article. The design and placement of water intake structures at each development shall be shown on the Exhibit L drawings to be filed for approval pursuant to Article 35. The Licensee, within one year from the date of issuance of this license, shall file for Commission approval an Exhibit S conforming to Commission Rules and Regulations under the Federal Power Act.

Article 48. The Commission expressly reserves the right to prescribe after notice and opportunity for hearing a selective clearing program for the reservoirs of the project.

Article 49. The Licensee shall install and operate such signs, lights, sirens, or other devices below the lower development powerhouse to warn the public of fluctuations in flow from the project, and shall install such safety devices in the reservoirs of both developments as log booms above the spillway and other facilities, as may be reasonably needed to protect the public in its recreational use of project land and waters.

Article 50. The Licensee shall, following consultation and in cooperation with the appropriate agencies of the States of North Carolina, Virginia and West Virginia and the Environmental Protection Agency, provide for the establishment and operation of a system to monitor the quality of the water in the project reservoirs and to monitor the quality of the water as released from the lower reservoir. The information obtained shall be made available by the Licensee upon request; however, the Licensee shall immediately advise the Commission of any substantial deterioration of the quality of the water in either reservoir or of the quality of the water as released from the lower reservoir.

Article 51. The Licensee, following consultation with the States of Virginia, North Carolina and West Virginia, the Environmental Protection Agency and the Department of the Interior, shall cooperate with the Corps of Engineers in an

effort to reach a mutually satisfactory agreement to operate the reservoirs of the project to achieve the public benefits herein provided for, and such agreement shall be generally in accordance with the following:

(a) The usable storage capacity of the lower reservoir, which consists of approximately 440,000 acre-feet between elevations 2,390 and 2,432, shall not be utilized for water quality control in lieu of adequate treatment or other methods of controlling waste at the sources.

(b) The project shall be operated to provide each year 130,000 acre-feet of storage in the lower reservoir to be used to augment low flows below Bluestone Dam from July 1 through about September 30, for the benefit of fishing and recreation, to the extent augmentation is necessary to bring such flows up to a weekly average of 2,500 cfs. The releases made from the lower reservoir to assure such flows shall be made so as to provide up to 1,200 cfs at Radford through the year 1999 and up to 1,400 cfs thereafter, as the need arises. The determination of Radford's needs up to such amounts shall be made by the State of Virginia, consistent with the provision of this Article, but the Commission reserves the right after notice and opportunity for hearing to prescribe any such releases as the public interest may warrant. If the releases provided herein do not deplete all storage for low-flow augmentation (130,000 acre-feet) by October 1, the remaining storage shall be evacuated during the month of October at an average weekly rate, in cfs, aproximately equivalent to the remaining storage in acre-feet divided by 61.5.

(c) The reservoir of the lower development shall be operated to provide approximately 160,000 acre-feet of flood control storage space, except that during emergency power operations when the Licensee requires additional storage to meet its electric system load requirements, flood control storage space in the lower reservoir may be temporarily utilized for power purposes, provided that an equivalent amount of such storage

space is made available for flood control purposes in the upper reservoir. In addition, the Licensee shall operate the upper development reservoir at all times so as not to exceed reservoir elevation 2,652 m.s.l., except when the inflow to the upper development reservoir is greater than the maximum spillway discharge capacity at reservoir elevation 2,652 m.s.l. (approximately 270,000 cfs). In the event of disagreement between the Licensee and the Corps of Engineers, the Commission expressly reserves the right to prescribe, after notice and opportunity for hearing, the operation of the project in the interest of flood control.

(d) For the purpose of normal power operations, and to provide for the operation of spinning reserve capacity, maximum drawdown of the upper reservoir shall be 10 feet, to elevation 2,642. Maximum drawdown of the lower reservoir shall be to elevation 2,390.

(e) Minimum releases from the lower reservoir shall be at least 350 cfs measured at a gauge below the confluence of the New River and Meadow Creek, and the rates of flow increase and decrease below the lower dam shall not exceed two feet vertically per hour as measured at such gauge; and

(f) To provide the 130,000 acre-feet of storage prescribed in subsection (b) hereof, the lower reservoir shall be refilled beginning March 1 of each year on a rule curve, with water in excess of the filling requirement under the rule curve released from the lower reservoir in addition to the minimum releases prescribed in subsection (e) hereof.

The Commission expressly reserves the right to prescribe the operation of the project reservoirs if the Licensee and the Corps of Engineers have not entered into an operating agreement within four years from issuance of the license for the project, and to modify the operation of the project, on its own motion or at the request of the Licensee, the Corps of Engineers, the Environmental Protection Agency, the Department of the Interior or the directly affected States, after notice

and opportunity for hearing.

Article 52. In connection with the highway relocations necessitated by the project, upon agreement by appropriate State agencies for their maintenance and operation, the Licensee shall cooperate with such agencies and with the North Carolina and Virginia Departments of Highways in developing not more than two scenic overlook areas along such relocated highways in each state, the cost of construction of which shall be borne by the Licensee.

Article 53. In planning and carrying out construction and maintenance of the project, the Licensee, after consulting with appropriate land-use planning agencies, shall consider the desirability of using construction facilities and roads for subsequent project use and area development.

Article 54. In operating its system steam-electric generating plants for or in otherwise obtaining pumping energy for the project, the Licensee shall consult and cooperate with appropriate Federal and State agencies in the interest of air and water quality control.

Article 55. The Licensee shall establish a relocation advisory service and give reasonable financial assistance to assist in the relocation of persons now located in the project area and to minimize any hardship to such persons arising from such relocation and, within six months of the effective date of the license and annually thereafter during the construction of the project, shall report to the Commission on the success of its efforts. The provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 shall be used as a guide to implement this article.

(D) The license granted herein shall become effective January 2, 1975, unless on that date there exists an Act of Congress that would delay or foreclose the Blue Ridge project.

(E) The Initial Decision of the Presiding Examiner issued on October 1, 1969, the Supplemental Initial Decision issued

on June 21, 1971, and the Additional Supplemental Decision issued on January 23, 1974, are adopted to the extent not inconsistent with this Opinion.

(F) All exceptions not granted are denied.
By the Commission.

(SEAL)

Kenneth F. Plumb,
Secretary.

United States Department of the Interior

Office of the Secretary
Washington, D. C. 20240

In Reply Refer to:
FWS/SE

Jan. 7, 1975

Dear Mr. Nassikas:

The Department of the Interior has a vital interest in maintaining the New River ecosystem in its relatively unaltered and unpolluted state from the headwaters in North Carolina to Charleston, West Virginia. It is for this reason that we have recommended enactment of legislation to authorize a study of the New River in North Carolina as a potential component of the National Wild and Scenic Rivers System, and are now reviewing a request by Governor Holshouser that a segment of the River in North Carolina be designated as a component of the System pursuant to section 2(a) (ii) of the Wild and Scenic Rivers Act. Our Office of Endangered Species and International Activities (U. S. Fish and Wildlife Service) has identified 23 species of plants and animals from this ecosystem which are found nowhere else in the world.

Unfortunately, all may not be well in this system. For one of these species, the Greenbriar crayfish, it may already be too late. This shellfish (*Cambarus nerterius*) has always been restricted to the Greenbriar River tributary in Greenbriar and Pocahontas Counties, West Virginia. Already under pressure from municipal wastes, much of this river was channelized in 1972.

The object of this letter is to ensure that measures are taken now to prevent a similar fate for another species of crayfish, a snail, a plant, and five species of fish.

The 23 species that are endemic in the New River system in North Carolina, Virginia, and West Virginia include 8 which

would be affected by the Blue Ridge power project proposal. These species include: the New River crayfish, *Cambarus chasmodactylus;* the dilatated diamond shaped snail, *Spirodon dilatata;* the New River mint, *Mechania cordata;* the New River shiner, *Notropia scabricepts;* the Bigmouth chub, *Nocomis platyrhynchus;* the Kanawha minnow, *Phenacobius teretulus;* the Kanawha darter, *Etheostoma kanawhae;* and the Finescale saddled darter, *Etheostoma osburni.*

Much habitat of these eight species would be inundated by the proposed Blue Ridge power project in Virginia and North Carolina. Impoundment would cause siltation and slowing of the flow along the New River and alter the required habitat of these species to the point where it is very improbable that they could continue to exist. Downstream to Claytor Lake, there would be severe stress to the required habitat of these species because of siltation produced during and after construction of the impoundments and cold water slug releases. While these eight species are found in other parts of the New River system, including for example, the Greenbriar River in West Virginia, they are jeopardized in all of these areas. It is our belief that if these species are not yet endangered or threatened the proposed impoundments at Galax and Independence may make them so. Our assessment is at variance with the Commission's statement at page 26 of its Final Environmental Impact Statement for the "Modified Blue Ridge Project" (June, 1973) that "(n)o rare or endangered species have been reported or are known to exist in the project area". We have considerable information on the distribution of these eight species in the New River system, including the Bluestone, East and Greenbriar Rivers in West Virginia; Craig, Reed and Little Creeks in Virginia; and the North and South Forks in North Carolina. We also are aware of many sources of endangerment to these species throughout the New River system.

We are presently gathering information on all eight species

which may be affected by the Blue Ridge power project to determine more precisely their distribution and other threats to their habitat.

The newly passed Endangered Species Act of 1973 places a heavy responsibility on Federal agencies. Section 7 of that Act specifically requires that:

> "The Secretary shall review other programs administered by him and utilize such programs in furtherance of the purposes of this Act. All other Federal departments and agencies shall, in consultation with and with the assistance of the Secretary, utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered species listed pursuant to section 4 of this Act and by taking such action necessary to insure that actions authorized, funded, or carried out by them do not jeopardize the continued existence of such endangered species and threatened species or result in the destruction or modification of habitat of such species which is determined by the Secretary, after consultation as appropriate with the affected States, to be critical."

I therefore request that you delay authorizing construction of the Blue Ridge power project in order to allow our Fish and Wildlife Service in the region and in Washington to carry out a study of the status of these eight species, and in order to permit our consideration of Governor Holshouser's application for designation of a segment of the New River in North Carolina as a component of the National Wild and Scenic Rivers System. I enclose for your information a copy of Secretary Morton's letter to Governor Holshouser which indicates that from six to nine months will be required to complete our review of the Governor's application.

I would be happy to meet with you to discuss the matter on a personal basis if you consider it necessary. Personnel of the Fish and Wildlife Service and the Bureau of Outdoor Recrea-

tion are also available for any additional information or assistance you may need.

Sincerely yours,

(Sgd) Nathaniel P. Reed

Assistant Secretary for Fish and Wildlife and Parks

Honorable John N. Nassikas
Chairman
Federal Power Commission
825 North Capitol Street, N.E.
Washington, D. C. 20426

Enclosure

cc:
S
Secy RF (2)
FWS/SE
FWS/LE
FWS - Dir RF
FOR - Dir Watt
FW - RF
FW - DPWheeler

FW: DPWheeler: mes 1/2/75 x-5347

United States Department of the Interior

Office of the Secretary
Washington, D. C. 20240

Mar. 25, 1974

Dear Governor Holshouser:

This responds further to the questions discussed during our recent conversation about New River.

We do not have detailed information on the wild, scenic, or recreation characteristics of the New, but we do have enough to be reasonably sure that physically and aesthetically, it qualifies for inclusion in the National System in one or more of these categories. As a matter of fact, we have recommended that 265 miles of the New River and its tributaries be studied, pursuant to section 5(a) of the Wild and Scenic Rivers Act. The problem, as you know, relates to the benefits or uses foregone. The Act requires that these be carefully evaluated before a stream is added to the National Wild and Scenic Rivers System.

If the Ervin, Helms, or Mizell bills are passed and signed by the President, the Federal Power Commission would be prohibited from licensing a project on that section of the river for five years or until an earlier study determines that it should not be added to the System.

The New River can also be added to the National System as a State administered component under the authority provided in section 2(a)(ii) of the Act. I agreed to outline how this is accomplished. The following steps are necessary:

1. The river must be designated as wild, scenic or recreational pursuant to an act of the State legislature.

2. North Carolina must adopt a comprehensive management plan which will permanently protect the scenic and recre-

ational qualities of the river and adjoining lands and provide for public use and enjoyment. Acquisition and development called for in the plan must be initiated.

3. You must send me a letter requesting the inclusion of the New River in the National System and documenting that the above two requirements have been met.

4. The Department must verify that the river possesses outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural or other similar values and qualifies for inclusion in the System.

5. The Act requires (sec. 4 (c)) that the Secretary submit your proposal for 90-day review to the Secretaries of Agriculture and Army, the Chairman of the Federal Power Commission, and other concerned Federal agencies and that he "shall evaluate and give due weight to any recommendations or comments which such officials furnish him."

6. Finally, if the decision is to add the river to the National System, notice must be published in the *Federal Register*.

While the State route is generally quicker than Congressional authorization for study, a study report, and subsequent Congressional inclusion in the National System under the management of a Federal agency, I think it is apparent that it, too, takes a considerable amount of time and requires that I weigh the values foregone as well as the values saved. I am told that the proposed Modified Blue Ridge Project will have an installed daily capacity of 1,800,000 kws and an annual production of 3,900,000,000 kilowatt hours. The initial proposal was also primarily a pumped storage project with an installed daily capacity of 980,000 kws and a lower pool of 2,850 acres that would fluctuate from full to empty on almost a daily basis. In view of the present energy situation, it would be unfair of me not to point out that a decision to forego this energy production would require my very careful deliberation. I enjoyed our visit, Jim, and appreciate your taking the time

to discuss this matter with me. I hope we can reach a solution that is in the best interest of all concerned.

Sincerely yours,
Rog Morton
Secretary of the Interior

Honorable James E. Holshouser, Jr.
Governor of North Carolina
Raleigh, North Carolina 27602

STATE OF NORTH CAROLINA
Governor's Office
Raleigh 27611

James E. Holshouser, Jr.
Governor

December 12, 1974

Mr. Rogers C. B. Morton
Secretary
Department of the Interior
Washington, D. C. 20240

Dear Rogers:

Pursuant to the authority of Section 2(a) (ii) of the Federal Wild and Scenic Rivers Act of 1968, 16 U.S.C. Section 1273(a) (ii), I hereby make application to you as Secretary of the Interior to designate the New River in north-western North Carolina as a "scenic river area" under the Federal Wild and Scenic Rivers Act.

In support of this application I hereby certify that the following actions have been taken by the State of North Carolina in order to comply with the conditions of Section 2(a) (ii):

1. The General Assembly of North Carolina has enacted legislation designating the Main Stem of the New River in North Carolina as a state scenic river area (G.S. 113 A-35.1) and has designated the South Fork of the New River for study as a state scenic river. (Resolution No. 170, Session Laws of N. C. 1973 General Assembly, 2nd Session 1974).

2. A management plan has been formulated by the Department of Natural and Economic Resources of the State of North Carolina for the permanent administration of the Main Stem and the South Fork of the New River in North Carolina as a scenic river. The implementation of

the plan will involve no expense to the United States. We are presently negotiating scenic easements and we have condemnation authority should this be required. The management plan is attached as Appendix A.

Pursuant to the Federal Wild and Scenic Rivers Act of 1968, you as Secretary of the Interior have the statutory authority to carry out a study to determine whether the New River in North Carolina meets the criteria set out in the Act for "scenic river" status. It is the position of the State of North Carolina, of course, that the New River possesses the required characteristics and we stand ready to cooperate with federal officials in aiding them to make the required study.

I'm aware that the Federal Power Commission has issued a license for a pumped storage-hydroelectric facility on the New River that would affect the branch of the New River which the General Assembly of North Carolina had designated a state scenic river prior to the issuance of the license.

I am today writing to the FPC to request them to further delay the effective date of the license pending your review of this request and the completion of the study which the Department of the Interior would carry out pursuant to Section 2(a) (ii) of the Federal Wild and Scenic Rivers Act. In the event the FPC refuses this request, the State of North Carolina will petition the Court of the District of Columbia to compel a delay of the effective date of the license pending the completion of the Section 2(a) (ii) study process.

Sincerely,

Jim
James E. Holshouser, Jr.

JEHjr/df
App. A: Management Plan

United States Department of the Interior
Office of the Secretary
Washington, D. C. 20240

December 24, 1974

In Reply Refer To:
D4219 - New River

Dear Mr. Holshouser:

This responds to your December 12, 1974, letter requesting the designation of the New River in northwestern North Carolina as a component of the National Wild and Scenic Rivers System.

As you know, I have strongly supported the proposed legislation to include the New River in Section 5(a) of the Act for study as a possible component of the National Wild and Scenic Rivers System. Congress has not enacted the necessary legislation.

Now that you have requested Secretarial designation of the River it is necessary for us to make a quick study of the segment of the River identified for inclusion in the System. In addition, we must comply with Section 4(c) of the Wild and Scenic Act (P.L.90-542) which requires that the Secretary of the Army, Secretary of Agriculture and the Chairman of the Federal Power Commission be given up to 90 days to review and comment on any applications to be acted upon by the Secretary of the Interior. We need at least six to nine months to study and make a decision on this matter.

Hopefully, circumstances will allow us this time.

Sincerely yours,

Rogers C. B. Morton

Secretary of the Interior

Honorable James E. Holshouser, Jr.
Governor of North Carolina
Raleigh, North Carolina 27611

Office of the Secretary
Department of the Interior
Washington, D. C. 20240

NEW RIVER

Approval for Inclusion in the National Wild and Scenic Rivers System as State Administered Scenic River Area.

Pursuant to the authority granted the Secretary of the Interior by section 2(a)(ii) of the Wild and Scenic Rivers Act (82 Stat. 906, 907) and upon proper application of the Governor of the State of North Carolina, the New River, North Carolina is designated a State administered scenic river area in the National Wild and Scenic Rivers System.

The segments of the New River designated in the National System include: New River mainstem, from the North Carolina-Virginia State line to the confluence of the North Fork and the South Fork (4.5 miles); South Fork New River from the confluence with the mainstem to the point of entry of the tributary stream, Dog Creek (22 miles).

This action is based on the designation of the New River by the State of North Carolina as a State scenic river area and the protection which the river will receive at no expense to the Federal Government upon full implementation of the management plan submitted with North Carolina's amended application and evaluated in the Final Environmental Impact Statement on the proposal prepared by the Department of the Interior.

Notice is hereby given that as of April 13, 1976, the New River as described herein, is approved for inclusion in the National Wild and Scenic Rivers System as a scenic river area to be administered by the State of North Carolina.

April 13, 1976

Thomas S. Kleppe
Secretary of the Interior

NORTH CAROLINA
WATAUGA COUNTY

AFFIDAVIT

Robert M. Poole, being duly sworn, deposes and says:

That I am a reporter for the *Winston-Salem Journal* (Journal) a daily newspaper published in Winston-Salem, North Carolina, that I have been employed by the Winston-Salem newspapers for four years, that I am a member of the Washington, D. C. Bureau of said newpaper and have been for 14 months;

That I am familiar with the Revised Appalachian Blue Ridge Project (Project) having covered said project for 14 months; that I have written at least seventy-five articles on Project which have been published in the *Journal;*

That I wrote a newspaper article published in the *Journal* on August 31, 1975, entitled "New's Archeological Resources Were Not Protected"; that in gathering facts to write said article I interviewed, by telephone or in person, the following persons, among others:

1. Douglas F. Wheeler, Deputy Assistant Secretary, Department of Interior. (Wheeler)
2. James G. Watt, Director, Bureau of Outdoor Recreation, Department of Interior. (Watt)
3. Raymond E. Hagenlock, Attorney, Federal Power Commission, in charge of Blue Ridge Project. (Hagenlock)
4. Dr. Harvard Ayers, Professor, Appalachian State University, Boone, N. C. (Ayers)
5. Dr. Charlton Holland, lecturer in anthropology, University of Virginia, Charlottesville, Virginia. (Holland)
6. Paul Johnson, Project Engineer (Retired), Appalachian Power Company, Roanoke, Virginia. (Johnson).;

That the foregoing named persons made statements to me as follows:

Ayers stated that he was employed by Appalachian Power Company (Appalachian) in 1965 to conduct an archeological survey of the area to be flooded by Project; Ayers was paid $600.00 for the survey, which took 13 days, by Appalachian; his survey was largely limited to investigating plowed fields and rock shelters that could be seen through heavy vegetation; a number of likely looking areas were impossible to investigate within the time available; he found 117 projectile points of arrowheads of various types; Ayers also found 112 pieces of pottery and other assorted artifacts; he recommended in his survey that ten of the twenty sites he surveyed be investigated further; in three sites he recommended "extensive testing", in one, "complete excavation" and in four "limited testing"; that there may be as many as 200 archeological sites in the project area; that the sites have "extensive surface concentrations of archeological materials and occupy promising locations. They are distributed rather evenly along the river bottom and thus should provide for a good . . . study of this heretofore unknown archeological area"; that the $7,500.00 specified for archeological surveys and salvage excavations in Article 33 of Opinion No. 698 of the FPC was "ridiculous—that's low"; that it would take $40,000 to $50,000 for three or four years of archaeological work in the project area; that said survey was furnished Appalachian in a written report entitled "An Appraisal of the Archeological Resources of The Blue Ridge Project, Grayson County, Virginia and Alleghany and Ashe Counties, North Carolina."

Holland stated that he completed a study of the revised Project in 1969 which was made at the request of Appalachian acting through Johnson; that the study lasted two weeks and covered some of the territory surveyed by Ayers in 1965; that from 42 sites, he recovered 1,459 pieces of pottery and 415 arrowheads and other stone artifacts; he found one "very large Indian village", and several "archaic encampments; that more excavations in the area would be a major contribution to the archeology of the eastern United States"; that it would take

two or three years to do an adequae study of the area and cost about $40,000; that he was paid $500.00 by Appalachian for the survey.

Johnson stated that neither the Ayers survey nor the Holland survey were transmitted by Appalachian to the FPC but that the FPC "knew we had them".

Hagenlock stated he did not know why the Final Environmental Impact Statement (FEIS), prepared by the staff of the FPC, failed to incorporate the results of the Ayers and Holland archeological surveys; that the surveys "are familiar but I can't say I saw them"; that he could not look in the FPC files to see if the suveys were filed; that "I don't know where you'd go to see if they had been filed."

Wheeler stated that the Interior Department has "no record of a survey's having been made that comports directly with the statute. The department did have notice of the plans (for the power project). I think you can make a case that someone violated the letter of the law if you go on the specifics."

Neither Wheeler nor Watt, upon questioning by the affiant, could explain why the Department of the Interior did not conduct its own archeological survey of the Project.

Robert M. Poole

Sworn to and subscribed to
before me this 10th day of
September, 1975

Jane P. Ryder
Notary Public

My Commission Expires:
July 23, 1980

COMMONWEALTH OF VIRGINIA

AFFIDAVIT

ALBEMARLE COUNTY

DR. CHARLTON G. HOLLAND, being duly sworn, deposes and says:

That I am a resident of Albemarle County, Virginia, and reside at 2206 Shelby Drive, Charlottesville, Virginia 22901; that I am presently employed by the University of Virginia as a lecturer in Anthropology and have been so employed for ten years; that early in 1969 the Smithsonian Institution received a letter from Mr. A. Joseph Dowd of American Electric Power Service Corporation of New York City, indicating a need for an updated archeological study of the Revised Blue Ridge Project; that in February, 1959, Dr. S. Dillon Ripley, Secretary of the Smithsonian Institution, requested the Affiant, who was then a Research Assistant of the Department of Anthropology, Smithsonian Institution, to cooperate with the Appalachian Power Company in carrying out this study; that arrangements were made for the Affiant to make this study through Mr. Paul J. Johnson, an employee of the Appalachian Power Company; that in the latter part of May 1969, the Affiant spent seven consecutive days in the field, followed by an interval of a week when rain interrupted the task, and a final three days were spent by the Affiant in the field in the first days of June 1969; that the Affiant was paid $500.00 by Appalachian Power Company for the aforesaid study.

That the Affiant prepared a written report of said study, which is entitled "The Revised Blue Ridge Project: An Archeological Survey and Summary", a copy of which is attached hereto and made a part of this Affidavit; that the Affiant furnished Appalachian Power Company a copy of said report in 1969; that Affiant did not furnish copies of said report to anyone else.

That it is the opinion of the Affiant that the area which

will be flooded by the Revised Blue Ridge Project is of extreme importance to a knowledge of eastern North America Prehistory; that said area received an unusually large number of cultural influences from many directions and was truly a cultural crossroads for several thousand years; it was also a center of development within its own innovations; artifacts found by the Affiant in the area surveyed exhibited cultural influences from the northwest and from the north, from the midwest, from the south and from the east; projectile point types found in the surveyed area by the Affiant spanned the entire range of aboriginal occupation of the eastern United States, indicating that the region was occupied continuously from Peleo-Indian times (about 8,000 B.C.) to the Historic Period (about 1540 A.D.); that the New River Valley is bound to be a tremendous passageway of aboriginal transport; it is a passageway of concepts and styles very important to the whole study of man's past; it is one of the few areas left where scientists can study every level of human development on the continent; in the Affiant's opinion, it is absolutely important to knowledge to know what is under the New River Valley; in the opinion of the Affiant, it would take between two and three years of extensive research to unravel the full human history of the area; it is the opinion of the Affiant that more excavation in the area to be inundated by the Revised Blue Ridge Project, would be a major contribution to the archeology of the eastern United States.

This the 5th day of September 1975.

Dr. Charlton G. Holland

Sworn to and subscribed before me
this 5th day of September, 1975.

C. C. Fretwell
Notary Public

My Commission Expires: July 21, 1979.

1969-

THE REVISED BLUE RIDGE PROJECT. AN ARCHEOLOGICAL SURVEY AND SUMMARY

by

C. G. Holland

University of Virginia

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Introduction

Early in 1969 the Smithsonian Institution received a letter from Mr. A. Joseph Dowd of the American Electric Power Service Corporation of New York City indicating a need for an updated archeological study of the Revised Blue Ridge Project. This project is the construction of two dams for electric power on New River with two pools that extend continuously 67 miles upstream from the lower dam and will cover 36,000 acres of land in Grayson County, Virginia, Alle-

ghany County, North Carolina, and Ashe County, North Carolina. In February 1969, Dr. S. Dillon Ripley, Secretary of the Smithsonian Institution, requested the author as a Research Associate to the Department of Anthropology, Smithsonian Institution, to cooperate with the Appalachian Power Company in carrying out this study. Arrangements were made through Mr. P. J. Johnson of the Appalachian Power Company for 10 days field work, to be done in the spring of 1969. This amount of time was thought to be sufficient because the data from two previous surveys in the area to be flooded were available. Therefore, in the latter part of May 1969, seven consecutive days were spent in the field, followed by an interval of a week when rain interrupted the task. The final three days were carried out in the first days of June. Forty aboriginal occupation sites and eleven fishdams were recorded during these ten days that had not been previously located. These are described, and the material recovered from each is listed at the end of this report.

Plan of the Survey

As noted above, two previous archeological surveys had been made in the area to be flooded by the two dams of the Blue Ridge Project. One was conducted by the River Basins Survey of the Smithsonian Institution for the Appalachian Power Company in 1965 with Harvard Ayers as the archeologist (Ayers, 1956). At this time the lower dam was to be built near Fries, Virginia, and the upper dam about four miles downstream from the mouth of Little River into New River. Ayers located and described 20 sites, two of which were above pool waters. Since the time of Ayers' survey, plans for the Blue Ridge Project have been revised. The lower dam will now be built just upstream from the confluence of Meadow Creek with New River in Grayson County, Virginia. This means that those sites found by Ayers between Fries and Meadow Creek (44Gr103, 44Gr105, 44Gr106, and 44Gr107) are downstream from the lower dam and in no immediate danger of loss. This

also reduces to thirteen the number of sites reported by Ayers that are within the revised pools.

Another survey, completely unrelated to the Blue Ridge Project, was conducted by the author in an archeological reconnaissance of the entire southwest Virginia region (Holland, n. d.). In 1964 this study located 11 Virginia sites and 2 North Carolina sites that are within the revised project pools (Appendix 2). This is not to say there are 26 sites reported by the two surveys since 3 sites were visited by both men. These are:

Ayers 1965	Holland 1964
44Gr111	Gy-7
44Gr112	Gy-8
44Gr114	Gy-6

These two surveys located sites within the revised Blue Ridge Project mainly along that stretch of New River, and on Little River, between Meadow Creek and the bridge carrying Routes 21 and 221, south of Independence, Virginia. Therefore the present survey was concentrated from this bridge upstream where only 4 sites were known from Ayers' survey (44Gr115, 44Gr117, 44Gr118 and 3LAs101) and one from Holland's 1964 survey (Gy-16). This resulted in the discovery of 4 sites in Alleghany County, North Carolina, 12 in Ashe County, North Carolina and 26 in Grayson County, Virginia. The word "discovered" should be modified to "revisited" in the case of 3LAs101 and Gy-16. In addition to aboriginal occupational areas a watch was kept on the river for fishdams and informants were queried about their existence and history. The reason for this is that, while the early settlers and their descendants trapped fish to supplement their food supply, so did the Indians, both using very similar types of traps. Four of these fishdams were actually seen and photographed while information was compiled on 7 others that may be explored later. These have been treated separately from occupational

areas and have not been given site numbers, nor will they be shown on the map of sites.

An accompanying map shows all the sites known to the author from the three surveys. In order to see at a glance which survey found them, I have retained for Ayers' survey the River Basins Survey system of using state numbers (31—North Carolina; 44—Virginia) followed by the county abbreviation (All—Alleghany; As—Ashe; Gr—Grayson) and finally the one hundred series site numbers. Holland's 1964 survey used only the county designation (All—Alleghany; Gy—Grayson) plus a site number. To differentiate the present survey from both the others the county designation (All—Alleghany; As—Ashe; Gy—Grayson) are followed by an upper case letter. Where a site has been recorded twice, one of the survey's symbols is placed in parenthesis.

Results of the Survey

From the *42* sites there were recovered 2,569 flakes, 1,459 potsherds and 415 worked stone specimens. These were returned to Charlottesville, Virginia, washed, dried and numbered, a process that took almost as long as it did to find and pick them up. These three gross categories were then lumped, separated into subcategories, sorted by the various sites according to the subcategories, counted and then returned to their original containers. It will be noted that the absence of bone and shell specimens is a particular feature of open sites. If they are to be found it will be in rockshelters such as Gy-C.

The archeologist who carries out excavations in the reservoirs will be faced with decisions about where to dig, what he may expect if chooses a certain site for excavation, what archeological problems he will be attempting to solve, and the like. The data gathered by the survey provides a basis for asking questions and making judgments. The results of the present survey, and that of Ayers', coupled with the analysis available from Holland's 1964 survey has been formulated into a brief summary of what is presently known of the prehistory in the

reservoirs. This is sketched temporally from the more recent to the more ancient.

Prehistory in the Reservoirs

The sand tempered, incompletely fired pottery of the Dan River Series (Coo and Lewis, 1952; Holland, n. d.; Plate 3, top row) is the most recent ware. It dates from the protohistoric into the historic periods, and is found elsewhere mainly in the Piedmont Uplands east of the Blue Ridge Mountains, but has previously been found on New River, especially around the mouth of Little River. The present survey recovered a total of 85 sherds, some from sites in Ashe County, an indication the cultural influence which carried it penetrated beyond the fork of New River. In comparison with the pottery series to be considered next the amount of Dan River pottery in the upper part of the Blue Ridge Project is quite small. It may be noted here in passing that in addition to the frabric impressed type of the Dan River Series described by Holland (Holland, n. d.) there is also the 'wicker' type described by Coo and Lewis (1952).

The most popular series of pottery in the reservoirs is the crushed stone (non-limestone) tempered Grayson Series. It is older than Dan River Series and replaces the Grayson Series through time as the most popular series in other areas of the Piedmont. Gy-10, a rockshelter in the lower pool and partially excavated in 1964 but has now been completely destroyed by pothunters, showed the Grayson Series was more popular in the lower levels and in the upper levels Grayson decreased while Dan River increased in popularity. The Grayson Series has a similar but not identical geographical distribution as the Dan River Series. The Grayson Series is more popular on the western side of the Blue Ridge Mountains, extending along New River at least as far as Montgomery County, Virginia. Absolute dates for this crushed rock tempered pottery have not been set but there are indications it was in existence around 1200 A.D.

One problem facing the archeologist excavating in the reservoirs is to determine the stratagraphic relationship between the Grayson Series (Holland, n. d.; Plate 3, middle row) and the soapstone tempered Smyth Series (Holland, n. d.; Plate 3, bottom row). The latter is the second most frequently found ware (388 sherds to Grayson's 978 sherds). Geographically, the Smyth Series occurs in a relatively narrow, north-south band which takes in the North, Middle and South Forks of the Holston River as well as the New and Roanoke Rivers in southwest Virginia. It, too, is tentatively dated around 1200 A.D.

Eight crushed limestone tempered sherds of the Radford Series (Evans, 1955) are an indication of cultural contact with the Appalachian Valley and Highland Province to the west where this series is abundant. It came into existence at least by 1350 A.D. and grew in popularity until, by the time of the historic period, it was almost the only pottery in use. This series is known to spill over the Blue Ridge Mountains onto the Piedmont Uplands northeast of the reservoirs since it is found in Patrick and Henry Counties, Virginia.

In Holland's excavation at Gy-10 an unclassified type of pottery with abundant mica for tempering material was found. During the present survey 4 sherds having a similar temper were sorted out. The significance of this ware is not known.

These are all Late Woodland ceramics. If there are Middle and Early Woodland wares they were either not recognized or the sites on which they will be found were not discovered. It should be noted that no sherd with any complicated stamping was found which would tie this area to the larger region of the Southeast from a ceramic standpoint. It may be mentioned here that the Small Clarksville Triangular points (Coo, 1964) belong to the Late Woodland Period and are associated with the named wares above.

If it is proposed the distinctive types of Archaic *projectile points*, for example Guilford Lanceolate or Savannah River

Stemmed, are markers of archeological phases within a large regional occurrence during Archaic times, then there are a minimum of 8 phases to be considered in the reservoirs. The oldest discovered is represented by Palmer Corner-Notched (Coo, 1964; Plate 4) dating about 6500 B.C. followed by Morrow Mountain (Coo, 1964; Plate 4) with its two divisions of Types I and II at 4500 B.C., Guilford Lanceolate (Coo, 1964; Plate 4) about 4000 B.C., Lamoka (Ritchie, 1961; Plate 4) about 3500-2500 B.C., Savannah River Stemmed (Coo, 1964; Plate 4) about 1500 B.C., Ledbetter (Kneberg, 1956; Plate 4) occurring in the Late Archaic, and Patrick Indentied Base points (Holland, n. d.) of an unknown Archaic period. Some of the unidentified points are undobutedly Archaic in time (Plate 4) and work in the reservoir may establish their dates. The very large triangular points (Plate 4) also present a problem to be solved. They are made generally of quartz and rhyolite, highly associated with the Archaic materials, and they have more association with Archaic, non-pottery sites than with villages on which pottery is found.

Utility, fabricating and processing tools such as knives, both backed and blade (Plate 5), scrapers whether of the side- or end-scraper variety (Plate 5), types of drills and reamers (Plate 4), hand choppers and large blades (Plate 6) have not been dated as closely as weapons (projectile points). Some have general dates. The end-scrapers, for example, tend to be associated with the Early and Middle Archaic periods.

Ayers' survey and the present one are biased in being limited to the height of the water, and thus the land area, in the reservoir pools. This means that the New River Valley along with the valleys of its dendritic streams received more attention than ridges or other geomorphological features where occupation sites might have been placed. *Water behind the upper dam will cover a series of ridge crests and where these were investigated it was found they were inhabited almost exclusively by Archaic people* as demonstrated by projectile point types

(All - C, Gy - E, Gy - F, Gy - P, Gy - Q, Gy - U, Gy - V, Gy - Y). There is a notable absence of pottery on these sites indicating that the Late Woodland people did not make much use of crests in their seasonal search for food. The Archaic people also used the bottomlands (All - D, As - D, As - K). The implication of this diversity of topographic placement of Archaic sites is the cultural need of these people to utilize a variety of ecological cores in the quest for food. On the other hand all sites with pottery are found on the alluvial plains, an indication some factor constrained the recent pottery-making people to a single core for their villages. This factor has been shown othnographically to be agriculture since the bottomlands are far more fertile than ridges. Furthermore, flooding of alluvial plains renews the fertility as necessary concomitant where slash-and-burn agriculture is practiced if a single area is to be reused for more than a few years.

Two types of sites with abundant pottery may be distinguished from surface indications. One is a linear arrangement of houses paralleling and very close to the river bank as at Gy-I and As-C. The other type is a smaller group of houses without a well defined pattern (44Gr114 (Gy-6)). These may tentatively be considered small farmlets, possibly associated with one of the larger villages, a suggestion which will have to be proven by more complete work. Stockades, which may be associated with the villages, showed no clues of their presence to the surface surveys.

That portion of New River where the reservoirs will be built is part of the ancient Teays River, and is in the Blue Ridge Geological Province. The exposed rocks are for the most part granite, quartz, gneiss, and shists. Therefore chert and chalcedony, formed in limestone or dolomite deposits, represent a foreign type of stone. These could be obtained in the Appalachian Valley to the west, and the presence of these stones in use by the Indians suggest possible trade exchanges with the Appalachian Valley. Although chert and chalcedony are found on Archaic sites, a greater abundance is found on Late Woodland sites, which, taken with the appearance of Radford Series pottery, may indicate an increased contact with the Appalachian Valley through time. The Archaic people relied more heavily on rhyolite and quartz, two types of local stones.

Recommendations

In the very brief analysis given above I have tried to delineate what is presently known of the prehistory in the reservoirs and between them and the surrounding territory. Excavation will greatly enlarge our undertaking of the cultural patterns of all periods, and made available by publication, will form a reference work on the archeology of the upper New River Basin. *This will be a major contribution to the archeology of the Eastern United States, comparable to the work done in the Norris and Pickwick basins.*

The archeologist in charge of excavations has now a wide variety of sites to choose from. It seems logical that one or more of the larger sites, Gy - I, All - D and As - C, will receive a large share of the work-hours since they have the potential to yield stratigraphy, answer questions about houses and village organization. The smaller Archaic sites, for example Gy - S, are just as important in view of the fact less is known about their stratigraphy and organization than sites of the more recent periods.

I would recommend the archeologist have a crew of two foremen and 10 workmen. The foremen should be trained by the archeologist before going to the field if they have had no previous experience. There are two possibilities for obtaining workmen. One is to recruit them from the neighborhood, in which case there may be competition from the construction company for available labor. This source, however, has the advantage of not having to provide room and board for a crew. The other possibility is to assemble a crew from people who have no former commitments, such as college students. These would necessarily have to be housed and fed (at their expense). There are a number of deserted houses near the sites where it might

be possible to negotiate a summer lease, and if water is available, and the house connected to electricity, would make suitable place for a temporary stay. Failing this the crew would have to be housed in the neighborhood wherever this could be found.

Ayers recommended three months field work and nine months laboratory work at a minimum cost of $11,000. With the information available from 3 surveys it is evident one summer session of work is not adequate and should be expanded to at least two summer sessions, or 6 months excavating time. The following is a breakdown of the cost for one summer's work.

Archeologist @ $700/month	$ 2,100.00
Two foremen @ $3.00/hr.	2,880.00
Ten workmen @ $2.00/hr.	9,600.00
Two laboratory aides @ $2.00/hr.	1,920.00*
Essentials	500.00**
	17,000.00
To Smithsonian for administering fund	1,700.00
	$18,700.00

* These two aides will be hired after the field work has been done to number, wash, sort and record the excavated material. The time is for 3 months each.

** Essentials include shovels, trowels, string, film, processing film, gas, brushes; wood for sifters, tables, stakes; medicine chest, insurance, buckets, bags, etc.

Site Descriptions

The sites are designated according to the scheme presented at the beginning of this report, namely: All — Alleghany County, North Carolina; As — Ashe County, North Carolina; Gy — Grayson County, Virginia. Upper case letters from A

to Z mark the individual locations in the various counties. Thus As-A is site A in Ashe County, and is so placed on the accompanying map. The descriptions will convey the following information: 1) the quadrangle map supplied by the Appalachian Power Company on which the site is located exactly as opposed to the general location on the map accompanying this report; 2) observations on the size, topographic location and soil of the sites; 3) analysis of the recovered material; 4) whether the site will be covered by reservoir waters; and 5) recommendations for excavation.

To bring the available information together I have added as appendices Ayers' survey as Appendix 1, and Holland's survey reports have been Xeroxed and are Appendix 2.

All - A. Independence SW quadrangle. South of Independence, Virginia, a convenient point of reference is the bridge carrying Routes 221 and 21 over New River. Approximately 4,000 feet southeast of the bridge is a small secondary alluvial terrace. It is deeply cut by an unnamed stream entering New River south of it and by floods of New River that rise above the primary terrace. *This erosion has left a peninsula-like terrace pointing northwest, and is well known to collectors in the area as an Indian site.* The material below was found only on the raised terrace over an area about 40 yards long and 10 yards wide. Artifacts, including fire-cracked stones were in greater quantity at the upstream end.

Material recovered: Flakes: chert — 23; chalcedony — 11; rhyolite—59; quartz—3; quartzite—3; Worked stone: Savannah River Stemmed point—1 (rhyolite); pitted hammerstone—milling stone—1 (sandstone); drill—1 (chert); large blade—1 (rhyolite); blade knives—3 (2 rhyolite, 1 chert); side scrapers —3 (1 chert, 2 quartz); cores—2 (quartz); unidentified projectile point fragments—2 (1 rhyolite, 1 chert); unidentified worked stone fragment—1 (quartz). Pottery: Smyth Series: not impressed—2, plain—2; Grayson Series: not impressed—5, fabric impressed—1, plain—1; Dan River Series: unclassified—1.

Recommendation: test cuts.

Status: site will be covered by reservoir waters.

All—B. Independence SW quadrangle. There is a low water bridge crossing New River carrying Route 1345. On the north (left) side of the river is a narrow plain one mile long upstream from the bridge. The downstream end of this plain is wider than the upper end and it is all alluvium while the upper end is yellow clay. On the plowed alluvium very scattered evidence of aboriginal occupation was found in an area 100 yards long parallel to the river and about 25 yards wide.

Material recovered: Flakes: quartz—7; rhyolite—5; chert—22. Side scrapers—2 (quartz).

Recommendations: no test cuts or excavation.

Status: site will be covered by reservoir waters.

All—C. Mouth of Wilson SE quadrangle. *A small archaic camp site was found 0.5 mile northwest of All—ED, to be described next.* It is west of Virginia Route 716 (the North Carolina Route is unmarked and unknown), northeast of the highest point on the ridge. The occupied area is in a shallow swale, and is about 10 by 20 yards in extent. The soil is a buff clay and had been plowed.

Material recovered: Flakes: quartz—25; chert—12; rhyolite—9; quartzite—1. Drill—1 (quartz); large blade—1 (rhyolite); end scraper—1 (chert); backed knives—2 (quartz); stemmed knife—1 (chert); unidentified worked stone—2 (chert, quartz).

Recommendations: no test cuts or excavation.

Status: will not be covered by reservoir waters.

All—D. Mouth of Wilson SE quadrangle. Two miles south of Mouth of Wilson is an alluvial plain on the northwest (left) side of New River that is one mile long and a thousand feet wide at its widest part. This entire plain had been plowed and cultural debris from many time periods was scattered from one

end of it to the other. A service road divided the plain into approximately two equal halves as it enters the plain at the southern tip of a large island in the river. Most of the pottery was found north of the service road over an area two hundred yards downstream and from the primary terrace enbankment to the slope of the ridge rising from the plain. Fragments of a large pot (Plate) plowed up from a depth in the ground of 18 inches or more were discovered 100 yards from the river and an equal distance from the service road. Archaic material was found within 50 yards of the terrace embankment long its entire extent.

At the southern end of the plain, southwest of the service road, there was a concentration of Archaic material. Pottery was scattered over this southern half of the plain but not in the same concentration as seen north of the service road. Fire cracked stone were abundant.

Material recovered: Flakes: quartz—48; rhyolite—126; chert—32; chalcedony—6; quartzite—1. Savannah River stemmed points—5 (3 rhyolite, 1 quartzite, 1 chert); very large triangular points—4 (2 quartz, 2 rhyolite); Clarksville Small Triangular points—3 (chert); Morrow Mountain Stemmed points II — 2 (rhyolite); Palmer Sidenotched point — 1 (quarts); Lamoka points—1 (rhyolite); Patrick Indented Base point—1 (quartz); unidentified side notched point—1 (chert); small parallel stemmed point—1 (chert); projectile point fragments—4 (1 quartz, 3 rhyolite). Drills—4 (chert); blade knives—5 (4 rhyolite, 1 quartz); side scrapers—4 (3 quartz, 1 rhyolite); end scraper—1 (chert); backed knives—5 (quartz); large blade with narrow rounded stem—2 (rhyolite); hand chopper—1 (rhyolite); cores —2 (quartz); worked stone unidentified—3 (quartz). Pottery: Smyth Series: not impressed—10, plain—12, scraped—1; Grayson Series: not impressed—47, cordmarked—21, fabric impressed—12, plain 17, unclassified—4; Dan River Series: not impressed 6, cordmarked—1, plain—3, unclassified—1; Radford Series: not impressed and knot roughened—2; Mica tempered sherd—1 (not impressed).

Recommendations: no test cuts.

Status: will be covered by reservoir water.

As—A. Furches NE quadrangle. There is a secondary terrace on the east (right) bank of the South Fork of New River, just upstream from Route 221 bridge, and downstream from a large unnamed creek that empties into the South Fork from the southeast. Potsherds and fire cracked stones were concentrated along the creek side of this bottomland about 20 yards from the river. The potsherds were so localized to an area about 25 yards in diameter that a small village or farmstead is suggested. A suggestion of Archaic occupation is to be found downstream from this pottery. The soil is a sandy clay.

Material recovered: Flakes: quartz—18; rhyolite—19; chert —22. Blade knives—4 (3 rhyolite, 1 chert); medium sized parallel stemmed point—1 (chert); point fragment—1 (rhyolite). Pottery: Smyth Series: plain—3; Grayson Series: not impressed—40, fabric impressed—1, plain—17, scraped—1, unclassified—6; Dan River Series: not impressed—7, plain—2.

Recommendations: excavation.

Status: will be covered by reservoir water.

As—B. Furches NE quadrangle. In the angle formed by Routes 1595 and 1601 on the southeast (right) side of the South Fork of New River, north and east of Peak Creek, is an Archaic site. It is on a primary terrace composed of thin silt deposits underlain with clay. The material was picked up from the lower terrace embankment about 10 yards from the river. This site is on the opposite side of the river from As—C, predominantly a Woodland village, and the material from the two sites contract with one another.

Material recovered: Flakes: quartz—67; rhyolite—16; chert —8. Morrow Mountain Stemmed point—1 (rhyolite); Savannah River Stemmed points—4 (rhyolite); Guilford Lanceolate —1 (quartz); drill—1 (chert); backed knives—2 (rhyolite

and quartz); backed knives—5 (quartz); large blade fragments—4 (3 rhyolite, 1 quartz); large point fragments—3 (2 rhyolite, 1 quartz); point fragments—3 (rhyolite); Upper Valley Sidenotched point (?)—1 (chert); worked stone unidentified—4 (quartz).

Recommendations: test cuts.

Status: will be covered by reservoir waters.

As—C. Furches NE quadrangle. *This one of the very large villages encountered during the survey.* It is on the north and west bank of the South Fork of New River, one half mile east of Route 1595, measured from the point of the bridge. The material reported below represents only a small sample that came from an unplanted but rain-washed arc adjacent to the river about 100 yards long and 20 yards wide at the widest part. Inland, as well as downstream from this sector, the land had been recently disced, making it extremely difficult to find anything, although an occasional potsherd or chip was picked up.

The occupational evidence of chips, potsherds and fire-cracked stones was clustered in distrete areas of about 10 yards in diameter, suggesting the debris was deposited about houses.

Material recovered: Flakes: quartz—41; rhyolite—13; chert —34; chalcedony—20; quartzite—6. Savannah River Stemmed point—1 (rhyolite); Clarksville Small Triangular points—1 (chert); drills—2 (chert); blade knife—1 (rhyolite); unidentified worked stone—2 (quartz, chert). Pottery: Smyth Series: not impressed — 53, plain — 63, scraped — 5, unclassified — 4; Grayson Series: not impressed—122, cordmarked—31, fabric impressed—9, plain—76, scraped—1, unclassified—24; Dan River Series: not impressed—17, fabric impressed—2, cordmarked—2, plain—9, unclassified—1; Radford Series: plain—1.

Recommendations: excavation.

Status: will be covered by reservoir waters.

As—D. Furches NE quadrangle. Very scattered material was found in a large bottomland on the east (right) side of the South Fork of New River, just south of Route 1595 bridge. The soil is clay. There was no physiographic separation of the Archaic and Woodland materials as found on some sites, and observation of the ground was unimpeded since the entire bottomland had been planted in corn and had been washed by rain.

Material recovered: Flakes: quartz—11; rhyolite—4; chert —4; chalcedony—1. Savannah River Stemmed points—2 (rhyolite); large blade—11 (rhyolite); large point fragments—13 (rhyolite); unidentified worked stone object—1 (chert). Pottery: Smyth Series: not impressed—2, plain—3. Grayson Series: not impressed—5, cordmarked—1, plain—4, unclassified —1; Dan River Series: not impressed—5.

Recommendations: no test cuts.

Status: will be covered by reservoir waters.

As—E. Furches NE quadrangle. A heavily silted bottomland (primary terrace) is on the west (left) side of the South Fork of New River, 0.4 mile south of Route 1595 bridge. Route 1596 passes between the bottomland and the river. Silt from flooding has either covered, or the floods have washed away all evidence of occupation next to the river. Beginning about 50 yards inland where the land has not been heavily silted a small collection was made. These must be regarded as peripheral to the main village because, by comparison with other villages, the main part of the village was placed close to the river bank.

Material recovered: Flakes: quartz—8; rhyolite—2. Clarksville Small Triangular points—2 (chert). Pottery: Grayson Series: not impressed—2, cordmarked—3, fabric impressed—1, plain—5, unclassified—4; Dan River Series: plain—1, unclassified—1.

Recommendations: test cuts.

Status: will be covered by reservoir waters.

As—E. Mouth of Wilson SW quadrangle. This site is on the primary terrace of the North Fork of New River, midway between the bridge of Route 16 and Route 1573, or about 0.5 mile from each. It is on the northeast (left) bank, and the soil is a leached clay. Pottery was confined to a continuous band 200 yards long parallel to the river and about 10 yards wide. The Archaic specimens were scattered inland and upslope to Route 1539. They were also found at the downstream end of this plowed but unplanted field which terminated at the confluence of a small unnamed stream with the North Fork. The deposition of the two widely separated periods overlap slightly but the more recent is nearer the river and the more ancient farther from the river.

Material recovered: Flakes: quartz—10; rhyolite—67; chert —9; chalcedony—4. Very large triangular point—1 (rhyolite); blade knives—2 (chert); side scraper—1 (chert); backed knife —1 (rhyolite); core—1 (rhyolite); large blade fragments—1 (rhyolite); large point fragments—2 (rhyolite); small point fragments—4 (2 chert, 1 quartz, 1 rhyolite). Pottery: Smyth Series: not impressed—7, plain—7, scraped—1; Grayson Series: not impressed—3, plain—5; Dan River Series: not impressed—1; Mica tempered: plain—1.

Recommendations: not test cuts.

Status: will be covered by reservoir waters.

As—G. Mouth of Wilson SW quadrangle. North of the high water bridge of Route 1573 across the North Fork of New River is a secondary terrace, 5 to 6 feet above the present flood plain. At one time a Woodland village was in existence along the edge of this terrace which undoubtedy has been subjected to much erosion with consequent loss of portions of the village. However I could not verify this is the field. The village extended at least from Route 1573 for 200 yards upstream, and judged by the distribution of pottery is not now over 20 yards

wide. The major occupation seems to have been near the bridge.

Material recovered: Flakes: quartz—5; chert—49; rhyolite—299. Savannah River Stemmed—1 (quartzite); Clarksville Small Triangular point—(chert); blade knife—1 (rhyolite); hand chopper—1 (rhyolite); unidentified point fragment—1 (chert); unidentified worked stone fragments—2 (chert). Pottery: Smyth Series: not impressed—7, plain—14, scraped—1, unclassified—2; Grayson Series: not impressed—29, cordmarked—11, plain—18, scraped—1, unclassified—1; Dan River Series: not impressed—3, cordmarked—1, plain—22; Radford Series: not impressed and knot roughened—1; Mica tempered: not impressed—1.

Recommendations: Excavations.

Status: will be covered by reservoir water.

As—H. Mouth of Wilson quadrangle. At the high water bridge of Route 1573 the North Fork of New River makes a "U" shaped bend. Within the bend, on the 2580 contour interval about 500 feet from the river, a series of Woodland artifacts were found. The plowed land on this old terrace was so small only a fragment of the terrace could be examined so the sample represents only a minor part of what may be a much larger village. This may also be a satellite village of As—G on the plain below.

Material recovered: Flakes: quartz—2; chert—31; chalcedony—6; rhyolite—4. Clarksville, Small Triangular points—2 (chert); side scraper—1 (chert); unidentified point fragments—3 (1 quartz, 2 chert); unidentified worked stone fragments—2 (chert). Pottery: Smyth Series: not impressed—3; Grayson Series: not impressed—13, cordmarked—10, fabric impressed—3, plain—14, unclassified—2; Dan River Series: not impressed—4, cordmarked—1, plain—1; Mica tempered: not impressed—1.

Recommendations: further reconnaisance and test cuts.

Status: site will be covered by reservoir water.

As—I. Mouth of Wilson quadrangle SW. One quarter of a mile downstream from the high water bridge of Route 1573 across the North Fork of New River is the low water bridge of Route 1563. On the east (right) bank was a large bean field bounded by Route 1563 on the north and Route 1557 on the west. In the angle formed by these two routes was a relative concentration of Archaic specimens. Widely scattered along the edge of the secondary terrace were potsherds. It seems probable that floods have washed away much of the Woodland occupation. No material was found more than 100 yards from Route 1563.

Material recovered: Flakes: quartz—10; chert—4; rhyolite—26. Ledbetter point or knife—1 (rhyolite); micro graver—1 (chert); blade knife—1 (chert); unique lunate knife—1 (chert); side scraper—1 (rhyolite); large point fragments—3 (2 quartzite, 1 rhyolite); small point fragment—1 (chert). Pottery: Grayson Series: not impressed—5, fabric impressed—1, plain—3; Dan River Series: plain—1.

Recommendations: no test cuts.

Status: site will be covered by reservoir water.

As—J. Furches NE quadrangle. The few quartz flakes recovered from this site indicate a very brief occupancy on the east (right) side of the South Fork of New River, one quarter mile north of the confluence of Peak Creek and the river. A large area of land had been plowed here so the opportunity for reconnaissance was extensive.

Material recovered: Flakes: quartz—8; rhyolite—1.

Recommendations: no test cuts.

Status: site will be covered by reservoir water.

As—K. Furches NE quadrangle. The land on which this site was found had been recently disced and was totally unsuited

for inspection from an archeological point of view. It is located about a half mile from Route 1595 bridge over the South Fork of New River as one travels along Route 1592. The general area is on the left bank and the site is located in the angle formed by the confluence of a small unnamed stream entering New River from the north. At this point, on the east bank of the unnamed stream, there was a short field road which had not been plowed. The material came from this spot. The remainder of the field may contain material but none was found.

Material recovered: Flakes: quartz—3; rhyolite—9; quartzite—1. Morrow Mountain Stemmed II point—1 (rhyolite); large blade—1 (rhyolite).

Recommendations: further reconnaissance and test cuts.

Status: site will be covered by reservoir water.

As—L. Mouth of Wilson SE quadrangle. In the vicinity of the confluence of the North and South Forks of the New River the alluvial plains are narrow, often uncultivated, and steep slopes, some precipitous, confine the stream. Where there are cultivated plots they are often on a slope near the water's edge and unsuitable for aboriginal occupation. A number of these were investigated but the only one to yield anything was on the North Fork, east of the stream and Route 1552, 0.2 of a mile north of a large island. The tenant of this small farm reported a friend had gathered 'handsful of points' several days before my visit. From what I found this seems like an exaggeration.

Material recovered: Flakes: quartz—4; rhyolite—1. Blade knife—1 (quartz).

Recommendations: no test cuts.

Status: site will be flooded by reservoir water.

Gy—A. Independence SW quadrangle. This site was pointed out to me by Mr. Reeves who lives nearby and had just disced the field. He also gave me the materials he had collected

as he disced. It is located a half mile north of the bridge carrying Routes 21 and 221 over New River, west and north of a bend in Brush Creek. The two routes above run northwest of the site. The area is a small alluvial plain of silty-sand soil about 75 yards long and 20 yards wide. I could find only 2 quartz flakes on the freshly plowed ground.

Material recovered: Flakes: quartz—2; rhyolite—2; chert—1. Blade knives—2 (1 quartz, 1 chert); Backed knife—1 (quartz); Lamoka point—1 (chert). Pottery: Grayson Series: not impressed—1, plain—1.

Recommendations: further reconnaissance.

Status: site will be covered by reservoir waters.

Gy—B. Independence SW quadrangle. One half mile northwest of the confluence of Elk Creek (this one flows from North Carolina) into with New River, on the west (right) bank is an alluvial plain. Cox's ferry once crossed the river at this point and now lies deteriorating on the west bank. Another landmark for reference is Penetentiary Ford, 0.2 mile to the south. This alluvial plain, composed of a silty-sand soil, is a primary terrace, and was completely in sod except for a plowed area about 200 feet long and 50 feet wide. The cultural evidence points to a mixed Archaic-Woodland occupation. The small amount of Woodland specimens suggest that the actual habitation site was not discovered and probably is hidden by the sod.

Material recovered: Flakes: quartz—75; rhyolite—33; chert—7; chalcedony—1; quartzite—1. Ledbetter knife or point—1 (rhyolite); very large triangular point—1 (quartz); drill—1 (rhyolite); blade knives—2 (rhyolite, chert); backed knife—1 (quartz); unidentified worked stone—2 (quartz). Pottery: Grayson Series: plain—3.

Recommendations: further reconnaissance and test cuts.

Status: will be covered by reservoir water.

Gy—C. Independence SW quadrangle. Across New River from Gy—B, that is on the east (left) bank there is a steep cliff with large protruding outcrops of granite. At the base of the cliff some outcrops form overhangs, or from a cultural standpoint, *rudimentary shelters.* These had been systematically dug into with a shovel, apparently by a collector looking for artifacts. *Mr. Munsy Cox showed me a cave-like shelter with a living space about 20 by 10 feet in size, and tall enough to stand upright in.* The floor was partially covered with leaves and rock spalls from the roof. Near the entrance, in searching for evidence of Indian occupation, a burned deer phalanx and two fragments of splintered bone were found.

This shelter is 70 feet above New River and out of reach of reservoir water. I was told by Mr. Cox the Appalachian Power Company now owns the land.

Recommendations: this site offers an opportunity to study bone specimens. A crew of 2 to 4 men will be able to excavate it in about 2 days.

Status: will not be covered by reservoir water.

Gy—D. Independence SW quadrangle. Bridle Creek enters New River a short distance west of the low bridge of Route 601. On the northwest (left) side of the river there is a series of three occupational areas, equally spaced in a north-south line. Gy—D is the lowest in elevation and most southern of the three. It is south of Bridle Creek and west of Route 711, or in the angle formed by these two features. It is situated on a flat secondary terrace with the occupational debris scattered over an area 30 yards in diameter. Part of the site had been destroyed in building Route 711. The remains of a stone hearth is falling down the route bank while part is still stuck in the sod at the top. A potsherd was also found at this point. The soil is a silty-sand alluvium.

Material recovered: Flakes: rhyolite—62; quartz—23; chert—16. Savannah River Stemmed point—1 (rhyolite); blade

knives—2 (rhyolite); hand chopper—(rhyolite); backed knife—1 (rhyolite); large blade fragment—1 (rhyolite); large point fragment—1 (rhyolite); unidentified point fragments—3 (rhyolite); unidentified worked stone—2 (quartz). Pottery: Smyth Series: plain—1; Grayson Series: not impressed—1, plain—2; Dan River Series: not impressed—1.

Recommendations: test cuts.

Status: will be covered by reservoir water.

Gy—E. Independence SW quadrangle. Mrs. Josh Rose, who lives on the north side of Bridle Creek, just west of Gy—D, pointed out the summit of a knoll 200 yards north of Gy—D and said she had found projectile points there. On investigation, the area in question was a relatively flat, truncated hill top, the soil a red clay, and it had been plowed. What material there was was scattered for 25 yards along the long axis, and had been plowed or eroded on to the sides of the knoll's top. This appears to have been an Archaic camp of brief duration.

Material recovered: Flakes: quartz—6; chert—1; rhyolite—3. Small rounded-base unidentified projectile point—1 (rhyolite).

Recommendations: no test cuts.

Status: will be covered by reservoir water.

Gy—F. Independence SW quadrangle. From Gy—E I went along the north trending, sharp ridge crest to a small plowed plot about 100 yards away. The plowed area was in a swale on the west side of the ridge, had lain fallow since the 1968 tobacco crop had been harvested, and was heavily eroded. The few evidences of occupation were widely scattered over an area 20 by 10 yards in size. The soil is a leached clay.

Material recovered: Flakes: quartz—2; rhyolite—3; chert—1. Morrow Mountain Stemmed point II—1 (rhyolite); hand

chopper—1 (rhyolite); unidentified point fragment—1 (rhyolite); unidentified worked stone—1 (chert).

Recommendations: none.

Status: will be covered by reservoir water.

Gy—G and Gy—H. Independence SW quadrangle. At the upstream end of the large alluvial plain on which Gy—I (Plate 1) is located there is a slope from a ridge to the north leading down to the plain. About 200 yards to the west is Route 601, and immediately north of the sites is Route 711. This slope is marked by a somewhat flattened but eroded area at the 2520 contour interval, probably an old terrace of the river. *An Archaic encampment was found at this point* about 15 by 20 yards in size. This was listed as Gy—G.

Where the slope joins the alluvial plain more Archaic material was found. This 20 feet lower than Gy—G. It is possible material collected at this point was washed or plow-scattered from the higher position. However, no cultural debris was found in the intervening zone, a distance of approximately 20 yards, so the lower area was designated Gy—H. Both sites are approximately the same size, both are on clay soils with no cover or plowing, and both were somewhat eroded since the 1968 corn crop had been harvested.

Material recovered (Gy—G): Flakes: quartz—7; rhyolite—22; chert—3. Large point fragment—1 (rhyolite); reamer—1 (rhyolite); core—1 (rhyolite); backed knives—2 (quartz); side scraper—1 (quartz); unidentified projectile point—1 (quartz). Pottery: Grayson Series: cordmarked—1.

Material recovered (Gy—H): Flakes: rhyolite—95; chert—3; chalcedony—2. Savannah River Stemmed point—1 (rhyolite); large blade—1 (rhyolite); large blade fragment—1 (rhyolite); core—1 (rhyolite); unidentified medium sized parallel stemmed point—1 (chert); unidentified point fragments—2 (rhyolite).

Recommendations: no cuts or excavation.

Status: will be covered by reservoir water.

Gy—I. Independence SW quadrangle. (Plate 1). This extended village is one of the large villages recorded by the present survey. It is situated on an alluvial plain one mile long, on the north (left) side of New River, east of Route 601 and south of Route 711. Occupational debris is strewn along the embankment of the primary terrace for a half mile, measured from the upstream end of the alluvial plain. However, the village is narrow, being 10 to 15 yards wide. The upstream two thirds of the village had not been plowed, was well washed by winter rains and so presented a surface for adequate observation. This showed that fire cracked stones, flakes and potsherds were clustered in areas about 5 to 10 yards in diameter with relatively artifact-free intervals between the clusters. This pattern suggests individual houses. The downstream third of the site had been plowed and unwashed by rain. Even here the tight association of artifacts suggested a similar pattern.

This site is across the river from Gy—O. It is a reasonable assumption that the two sites, neighboring in space and with similar cultural contents, are connected culturally and may even have been coeval.

Material recovered: Flakes: quartz—6; rhyolite—81; chert—455; chalcedony—22. Clarksville Small Triangular points—2 (chert); very large triangular point—1 (rhyolite); drill—1 (chert); unidentified small side-notched points—2 (chert); unidentified point—1 (chert); reamer—1 (chert); unidentified point fragments—3 (chert); worked stone fragments—2 (chert). Pottery: Smyth Series: not impressed—2, scraped—1; Grayson Series: not impressed—136, cordmarked—32, fabric impressed—7, plain—61, unclassified—49; Dan River Series: not impressed—5, cordmarked—4, plain—7; Radford Series: not impressed and knot roughened—2, plain—2.

Recommendations: extensive excavation.

Status: will be covered by reservoir water.

Gy—J. Independence SW quadrangle. There is an outcrop of granite two hundred yards southeast of the junction of Routes 58 and 711, two miles west of Independence, Virginia, where Shoal Creek crosses Route 58. The exposed stone forms an overhang, below which is a relatively flat surface, large enough to accommodate a family sized band. The only surface indication of occupation was a single quartz flake. This limited evidence provides a clue which should be followed up by a more thorough investigation.

Recommendations: test cuts.

Status: will be covered by reservoir water.

Gy—K and Gy—L. Independence SW quadrangle. These two sites are on the north (left) bank of New River, west of Gy—M. Both are about 200 yards long parallel to the river, both are 10 yards wide and both are on the secondary terrace. They differ in artifact content and position on the secondary terrace.

Gy—K, the more recent as indicated by the pottery, is near the embankment of the secondary terrace where the soil is alluvial in nature and has a grey to black stain. This soil color is common in the New River Valley and not necessarily associated with charcoal deposits. I was told by the agricultural adviser for the area it occurs where the water table rises to the surface.

The older site, Gy—L, as indicated by the artifacts, is more inland from the terrace embankment, and the soil here is a yellowish-orange clay. Furthermore it is one to two feet higher in elevation than Gy—K. There is even a band of this yellowish-orange clay forming a low embankment between the alluvium and the higher ground. This area was artifact free. One reason for this is that the plowing has been done parallel to the river which gives the longest furrows rather than with much shorter rows across the width.

Material recovered: (Gy—K): Flakes: quartz—27; rhyolite — 22; chert — 20. Clarksville Small Triangular points — 3 (chert); large point fragment—1 (rhyolite). Pottery: Grayson Series: not impressed—28, cordmarked—4, fabric impressed—3, plain—7, unclassified—2; Dan River Series: not impressed —1, fabric impressed—2, handle or adorno—1.

Material recovered: (Gy-L): Flakes: quartz—2; chalcedony —1, rhyolite—31. Savannah River Stemmed point—1 (rhyolite); Ledbetter knife or point—1 (quartzite); large blade with narrow rounded stem—1 (rhyolite); large blade fragment—1 (rhyolite); blade knife—1 (rhyolite); side scraper—1 (quartz); point fragment—1 (rhyolite).

Recommendations: test cuts.

Status: will be covered by reservoir water.

Gy—M. Independence SW quadrangle. All the plowed areas in the vicinity of Gy—I were investigated. This site is the most eastern found on this stretch of New River. Beyond this point the river makes a sharp bend to the south, is confined by steep hills. The site is on the north (left) bank and the physiographic zone is a secondary terrace of yellowish clay, six feet above the primary. Refuse was scattered over an area 35 yards parallel to the river and 10 yards wide. The terrace must be an old one since the Palmer Side-notched point dates from 6500 B.C.

Material recovered: Flakes: quartz—2; rhyolite—3; chalcedony—1. Palmer Sidenotched point—1 (crystal quartz); large blade fragment—1 (rhyolite); side scraper—1 (quartz); backed knife—1 (quartz).

Recommendations: test cuts.

Status: will be covered by reservoir water.

Gy—H. Independence SW quadrangle. In the complex of sites near Gy—I this one belongs to the Archaic period. It is on an old, eroded secondary terrace, several hundred yards

from the north (left) bank of New River and is downstream from Gy—I. The soil is a yellowish clay which at the time of my visit had been plowed but only slightly rain washed. South of the site the alluvial plain was in sod. The material indicates a brief occupancy that has now been much scattered by plowing.

Material recovered: Flakes: quartz—7; rhyolite—25; chert —5; chalcedony—22. Morrow Mountain Stemmed point II—1 (quartz); large blade fragments—2 (rhyolite); blade knife—1 (rhyolite); backed knife—1 (quartz); point fragments—2 (quartz, rhyolite).

Recommendations: no test cuts.

Status: will be covered by reservoir water.

Gy—O. Independence SW quadrangle. Plates 1 and 2. On the south side (right) of New River, opposite Gy—I, is a smaller but still quite large alluvial plain. The top soil is mainly a silty-sand and the subsoil is a yellow clay which is exposed near the middle of the plain. This is a primary terrace about 10 feet above normal water level. Most artifacts were found at the upstream end but were scattered along the edge of the terrace for a distance of 50 to 75 yards. This land had been plowed and was not rain washed so the sample is smaller than if made under better collecting conditions. There were numerous fire cracked stones but no concentrations of artifacts could be made out, as at Gy—I.

Material recovered: Flakes: quartz—14; chert—67; chalcedony—21; rhyolite—11. Clarksville Small Triangular points—5 (chert); unidentified point—1 (chert); drill—1 (chert); blade knife—(quartz); side scraper—1 (chert); point fragments—3 (chert); unidentified worked stone—1 (chert). Pottery: Smyth Series: plain—2; Grayson Series: not impressed —10, cordmarked—2, plain—5, unclassified—1; Dan River Series: not impressed—1, plain—1.

Recommendations: *excavation.*

Status: will be covered by reservoir water.

Gy—P. Mouth of Wilson SE quadrangle. On the south side of Route 711 near Gold Hill School, on the top of a southwest trending ridge, was plowed area which was investigated although above reservoir water. The area is about 50 yards long with the axis of the ridge and about 20 yards wide. The soil, a leached clay, had been plowed and rain washed. Material was thinly scattered over the entire plowed plot and undoubtedly extends to the west where the ridge is still flat but was in low bushes and trees.

Material recovered: Flakes: quartz—50; rhyolite—19; chert —5; chalcedony—2. Savannah River Stemmed point—1 (quartz); Lamoka point—1 (chert); unidentified point—1 (chert); large blade fragment—1 (rhyolite); blade knife—1 (quartz); backed knives—2 (quartz); side scrapers—2 (quartz); drill—1 (chert); point fragments—3 (quartz), chert (chalcedony); unidentified worked stones—4 (3 quartz, 1 chert).

Recommendations: no excavations.

Status: will not be covered by reservoir water.

Gy—Q. Mouth of Wilson SE quadrangle. One and seven tenths of a mile southeast of the Village of Fox is a flat top ridge about 2640 feet above sealevel. New River is 0.3 mile distant to the south, and the ridge edge drops off sharply toward the river. It was at this point occupational debris was scattered over an area 25 yards long and 15 yards wide. Mr. Shirley Halsey, who lives below the site, has collected from it and a photograph of some of his finds were made.

Among his collection was a six inch quartzite blade which had been discovered on Cedar Island in the river below his home. This object probably is a ceremonial blade and the site it came from should be investigated after the island has been cleared of trees.

Material recovered: Flakes: quartz—46; rhyolite—11; chert —4. Unidentified medium sized parallel stemmed point—1 (rhyolite); unidentified sidenotched point—1 (rhyolite); large blade fragments—1 (rhyolite); blade knives—3 (2 quartz, 1 rhyolite); side scraper—1 (quartz); backed knife—1 (quartz); point fragments—3 (2 quartz, 1 rhyolite); unidentified worked stone—5 (4 quartz, 1 rhyolite).

Recommendations: test cuts; reconnaissance of Cedar Island.

Status: will be covered by reservoir water.

Gy—R. Mouth of Wilson SE quadrangle. One half mile southeast of Fox on Route 58 there were large tracts of plowed ground covering a series of ridges. These tracts were investigated without finding any evidence of Indian occupation except at one place. This was south of Route 711, opposite the Kirk dairy barn, on a red clay ridge. The sample is so small an extremely brief stay is indicated.

Material recovered: Flakes: rhyolite—1. Blade knife—1 (rhyolite).

Recommendations: no cuts.

Status: will be at the edge of reservoir water.

Gy—S. Independence SW quadrangle. This is a relatively heavily occupied Archaic site which lies on a flat secondary terrace, east of Saddle Creek and north of Route 58. It is about 50 by 50 yards in size; the soil is a red clay and had been plowed at the time of my visit.

The owner has been collecting here and has approximately 40 to 60 points and fragments. Among these are Kirk Serrated, LeCroy, Savannah River Stemmed, Big Sandy Sidenotched and Guilford Lanceolate. He is interested in only what is found on his site so the collection is representative of what may be found on the surface.

Material recovered: Flakes: quartz—50; rhyolite—64; chert

—6; chalcedony—6. Savannah River Stemmed—2 (quartzite, rhyolite); very large triangular points—2 (quartzite, quartz); unidentified rounded base point—1 (rhyolite); medium sized parallel stemmed point—1 (quartz); large blade—1, and large blade fragments—2 (rhyolite); large point fragments—3 (rhyolite); blade knives—3 (2 rhyolite, 1 quartz); side scrapers—3 (2 quartz, 1 chalcedony); hafted end scraper—1 (chert); backed knives—3 (quartz); point fragments—5 (2 chert, 3 rhyolite); unidentified worked stone items—4 (2 quartz, 2 chert).

Recommendations: test cuts.

Status: will be covered by reservoir water.

Gy—T. Mouth of Wilson SE quadrangle. One mile northwest of Mouth of Wilson, along the southeast side of Wilson Creek is an alluvial plain of several acres extent. It is highly eroded by overflow but some acres have resisted erosion. In the middle of the plain there is a section about 35 yards in diameter which is less eroded than the land nearer the creek. It is here the sample below was found. A collector's winding path was confined to this area and he had picked up a sample of large percussion made flakes only to discard them near the center.

This site is similar to Gy—X in that erosion has destroyed much of it. The small pottery sample at both, in contrast with the much older and larger Archaic samples suggest the Woodland component was more superficial and closer to the stream than the Archaic component. As a consequence the Woodland evidence has been largely swept away.

Material recovered: Flakes: quartz—2; rhyolite—177; chert —6. Large blade—1 (rhyolite); large blade fragment—1 (rhyolite); end scraper—1 (quartz); hand chopper—1 (rhyolite). Pottery: Grayson Series: cordmarked—1.

Recommendations: no test cuts.

Status: will be covered by reservoir water.

Gy—U and Gy—V. Mouth of Wilson SE quadrangle. These two Archaic sites are on a ridge overlooking Fox Creek to the west, and are midway between two unnamed creeks that arise north and south of the sites, northwest of Route 58. Gy—V will be almost surrounded by water in the reservoir while Gy—U will be at the water's edge as it inundates the valley of the southern creek.

The ridge is flat topped and clover leaf in shape. Gy—U is about 10 yards in diameter on the eastern sector of the clover leaf. Gy—V is spread over the southern and western sectors. A cemetery and a sterile zone separate the two sites. The soil is a leached clay.

Material recovered: (Gy—U); Flakes: quartz—19; rhyolite—14; chert—2. Small rounded base point—1 (chert); large blade fragment—1 (rhyolite); large point fragment—1 (rhyolite); side scraper—1 (quartz).

From Gy—V: Flakes: quartz—24; rhyolite—13; chert—4; chalcedony—1. Guilford Lanceolate—1 (rhyolite); Morrow Mountain Stemmed point II—1 (quartz); large blade—1 (quartz); large blade with narrow rounded stem—1 (rhyolite); side scrapers—3 (2 quartz, 1 chert); blade knife—1 (quartz); backed knives—3 (2 quartz, 1 rhyolite); large blade fragment—1 (rhyolite); hand chopper—1 (rhyolite); core—1 (quartz); point fragments—2 (quartz, rhyolite); unidentified worked stone—2 (quartz, rhyolite).

Recommendations: no test cuts.

Status: see site description.

Gy—W. Mouth of Wilson SE quadrangle. The confluence of Little Fox Creek with Fox Creek forms a "V" with the apex of the "V" pointing south. Within this "V" erosion by both streams has formed a secondary terrace 10 to 15 feet higher than the primary. A rather large Archaic site is located on the secondary terrace with material scattered over an area about 50 yards wide based on Little Fox Creek and 100 yards long

parallel to Fox Creek to the west. The site is well known to collectors and apparently much material has been taken from it. The soil is buff clay.

A few artifacts were collected from the slope and primary terrace of Fox Creek. These may have been washed or plow scattered to this section, or they may be part of a site on the primary terrace.

Material recovered: Flakes: quartz—11; rhyolite—43; chert—7. Very large triangular point—1 (rhyolite); large blades—3 (rhyolite); large blade fragment—1 (rhyolite); blade knives—2 (2 quartz, 1 rhyolite); side scrapers—5 (4 quartz, 1 rhyolite); backed knives—8 (6 quartz, 2 rhyolite); hand chopper—1 (quartz); point fragment—1 (chert); unidentified worked stone—1 (quartz).

Recommendations: test cuts.

Status: will be covered by reservoir water.

Gy—X. Middle Fox Creek quadrangle. West of Gy—V, between Route 711 and Fox Creek, is an alluvial plain. Approximately 50 yards from the creek was a narrow band of artifacts about 75 yards long and 10 yards wide, paralleling the creek. Nearer to Fox Creek there was evidence of erosion. To the east of site is a sharp embankment rising 10 to 15 feet to a secondary terrace. This had a flat surface suitable for occupation but was covered in a dense sod and could not be examined. The area producing artifacts must be well known to a local collector since his tracks were much in evidence. The small amount of material recovered shows that both erosion and present day collecting activities have taken away much material.

Material recovered: Flakes: quartz—8; rhyolite—44; chert—5; chalcedony—1. Large blade fragment—2 (rhyolite); hand chopper—1 (rhyolite); backed knife—1 (quartz); Savannah River Stemmed point (?)—1 (rhyolite). Pottery: Smyth Series: plain—1; Dan River Series: not impressed—2.

Recommendations: no test cuts.

Status: will be covered by reservoir water.

Gy—Y. Middle Fox Creek quadrangle. Half way between Middle Fox Creek and Little Fox Creek a small ridge protrudes to the southwest from Russell Knob, overlooking Fox Creek. Although the ridge rises sharply 2600 feet above sea-level to its top, and is narrow in a northwest-southeast direction, it contains small areas that are relatively flat only. Artifacts were found on the lowest of relatively flat areas, just above the steep drop-off to Fox Creek Valley. Artifacts were thinly scattered over an area 20 yards long and 15 yards wide in a freshly plowed field. I was told by Mr. Nash some artifacts had been found years ago on a flatter zone higher and northeast of Gy—Y. This area, unfortunately, was in sod.

Material recovered: Flakes: quartz—2; rhyolite—63; chert—3; chalcedony—1. Morrow Mountain Stemmed point II—1 (rhyolite); unidentified sidenotched point—1 (chert); large blades—2 (rhyolite); large blade fragments—4 (rhyolite); unidentified point—1 (quartz); blade knives—2 (rhyolite); side scraper—1 (rhyolite); large point fragments—2 (rhyolite); small point fragments—1 (chert); unidentified worked ston—2 (quartz, rhyolite).

Recommendations: further reconnaissance

Status: will be covered by reservoir water.

Gy—Z. Middle Fox Creek quadrangle. An Archaic camp site was discovered in a freshly plowed field and garden plot on Little Fox Creek, 0.4 mile from the creek confluence with Fox Creek. The site is on the northeast secondary terrace and is 40 to 50 yards long and 10 to 15 yards wide. Northwest of the site the land slopes to a ridge which contained no artifacts, and they were absent further northeast along the terrace. Where the artifacts were found the soil is a greyish clay while that of the ridge slope is reddish.

Material recovered: Flakes: quartz—7; rhyolite—60; chert—5; chalcedony—3. Guilford Lanceolate—3 (rhyolite); very large triangular point—1; small parallel stemmed point—1 (rhyolite); unidentified point—1 (rhyolite); large blade fragments—4 (3 rhyolite, 1 quartz); large point fragments—2 (rhyolite); blade knives—2 (rhyolite); point fragment—1 (rhyolite); unidentified worked stone—2 (rhyolite).

Recommendations: test cuts.

Status: will be covered by reservoir water.

Fishdams

An aboriginal method of catching fish was the use of rocks piled in the river to form a "V". The apex of the "V" pointed downstream and here a basket trap was placed. Fish, deflected by the stone walls, were sluiced into the trap from which they could not escape because of a baffle. The method was efficient in that it did not require constant attention and could be emptied at convenience. This method of fishing was adopted by the pioneers and used up to the recent past.

New River and its forks are ideal streams in which to build these traps. They are not deep, the bottom is relatively flat and firm, being based on the granite strata that New River is eroding. The dams did not have to be built completely across the stream, only one half to one quarter of the distance. The apex of the "V" could be brought toward the nearer bank for easy attention to the basket. Furthermore floods appear to have caused little or no dislocation of the arms and sand or silt has not accumulated behind them.

The primary concern of the survey was for occupational sites. As a consequence the length of the arms, angle of the "V" and rock structure of the 4 dams photographed were not investigated in depth because of time limitations. It was not until the photographs were studied that 2 dams were noticed to have a single large boulder protruding from the upper end of the outer arm as if to act as an anchor. It was

noted in the field that the longer arm protruded toward the center of the river and the shorter arm was anchored at the bank.

These fishdams have not been reported from the New River basin before and little is known about them in other streams. Therefore they are an important subject of study before the reservoir water hides them.

Alleghany County Fishdams

Alleghany Fishdam No. 1. Mouth of Wilson SE quadrangle. A fishdam was reported to be just downstream from Route 1552 bridge. I walked across the bridge trying to locate it but was unsuccessful. It is said to be on the east side of the North Fork of New River at this point.

Alleghany Fishdam No. 2. Mouth of Wilson SE quadrangle. This one was also not seen. It is reported to be about 4,000 feet south of Route 1552 bridge across the North Fork of New River, just below a large island in the stream, and on the west (left) bank of the river.

Ashe County Fishdams

Ashe Fishdam No. 1. Furches NE quadrangle. South of Route 1595 bridge across the South Fork of New River are two fishdams. These were discovered by watching the river while travelling along Route 1596. No. 1 is on the east (right) bank of the river about 200 yards south of the bridge. The outer arm is about 40 feet long while the inner is about half this length. No one with whom I talked knew of this fishdam or No. 2 below.

Ashe Fishdam No. 2. This fishdam is on the west (left) side of the South Fork of New River 0.5 mile from 1595 bridge and is about half again larger than No. 1. It is made of small cobbles with the angle of the "V" not more than 20 feet from the bank. The outer wall is anchored with a large boulder.

Grayson County Fishdams

Grayson Fishdam No. 1. Independence SW quadrangle. This fishdam was seen and photographed. It is on the west (right) side of New River just below what used to be Cox Ferry and a short distance downstream from Gy—B. The cobbles and boulders forming the outer arm of the "V" is approximately 200 feet long and extends a third of the distance across New River. The shorter arm is 75 to 100 feet long and where the fish were trapped is approximately 25 feet from the west bank. The open mouth of the "V" is associated with a small rapid which not only causes a barrier but forms a lengthy but shallow pool across which the ferry went. Mr. Munsy Cox pointed this fishdam out and stated he had never seen it in use.

Grayson Fishdam No. 2. Independence SW quadrangle. This fishdam was not seen although an attempt was made to do so. It is located on the north (left) side of New River where the upper dam of the Blue Ridge Project will be built. It was placed between an island on the northeast side of the river and the bank of the mainland near a series of rapids at this point. My informant was Mr. Clifton Osborne.

Grayson Fishdam No. 3. Independence SW quadrangle. Plate 2. This is a well known fishdam on the south (left) side of New River downstream from Route 601 bridge. The outer arm is approximately 150 feet long and has a very very short arm anchored to the bank. Mr. Munsy Cox said he had seen fish caught here many years ago. Mr. Clifton Osborne also pointed out this fishdam, and his son told me fish were not taken from the apex of the "V" but from a break in the long arm.

Grayson Fishdam No. 4. Independence SW quadrangle. The only information about this dam comes from Mr. Clifton Osborne who lives near it. It is on the east (right) side of New River, about half way between Grayson Fishdams No. 2 and

No. 3. I tried to find this dam as I drove along Route 711 but could not identify it.

Grayson Fishdam No. 5. Mouth of Wilson SE quadrangle. Information regarding this fishdam, as well as Grayson Fishdams No. 6 and No. 7, came from Mr. Shirley Malsey who lives near them. No. 5 is on the north (left) side of New River, between Cedar Island and the bank (see Gy—Q).

Grayson Fishdam No. 6. Mouth of Wilson SE quadrangle. This fishdam is upstream, that is west of No. 5, on the south (right) side of New River. The distance is reckoned to be about 1.25 miles.

Grayson Fishdam No. 7. Mouth of Wilson SE quadrangle. This fishdam is said to be on the same side of the river as No. 6 and about a quarter of a mile further upstream.

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An Appraisal

Of The Archeological Resources Of

THE BLUE RIDGE PROJECT

Grayson County, Virginia and

Alleghany and Ashe Counties, North Carolina

A Project of the Inter-Agency Archeological and

Paleontological Salvage Program

September 1965

By Dr. Harvard Ayers

Appalachian State College, Boone

by

River Basin Surveys

Smithsonian Institution

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Introduction

A Smithsonian Institution archeological survey of a portion of the New River in Grayson County, Virginia, and Alleghany, and Ashe counties, North Carolina, was begun by the writer on May 11, 1965, and completed on May 24, 1965. This work was a part of the long-range, archeological salvage program of the River Basin Surveys, Smithsonian Institution. The purpose of this program, begun in 1946, is to salvage and interpret the remains of prehistoric and early historic peoples from areas threatened with inundation by all phases of the nation-wide reservoir construction program. This particular survey covered the New River Basin from Fries, Virginia, to the forks of the river in Ashe County, North Carolina. The project is designated as the Blue Ridge Development Project No. 2317 and is being constructed by the Appalachian Power Company, a subsidiary of the American Electric Power Company.

The Blue Ridge Development Project No. 2317 will consist of two dams and will flood some 50 miles of river. The lower dam will be built approximately one-half mile above Fries, Virginia. The power pool will be at elevation 2,287 feet with control of the land to 2,300 feet. The pool level will fluctuate frequently. The upper dam will be constructed approximately four miles downstream from the mouth of Little River or about five miles east-northeast of Independence, Virginia. The pool level will be relatively constant at elevation 2,487 feet and control of the land will be to elevation 2,500 feet. The lower dam will be a "slave" or regulatory dam for the larger, upper unit. The construction date is uncertain but could start as early as the spring of 1966. Construction should be completed and flooding begun, at earliest, in 1970.

This survey was made possible by funds provided by the Appalachian Power Company. Mr. Tom Fralin of the Appalachian Power Company contributed maps of the reservoir area and also provided greatly appreciated advice concerning possible location of sites. A special note of thanks is due Mr. C. B. MacGavock, Consultant Geologist for the Appalachian Power Company, who was able to spend two days in the field with the survey party as well as to share his intimate knowledge of the geology of the area.

I am indebted to Dr. Robert L. Stephenson and Mr. *Carl F. Miller* of the River Basin Surveys, and to Mr. Howard MacCord of Richmond, Virginia, for their sound guidance in the planning stages of the survey and also to Mr. Howard MacCord for the two days that he was able to spend in the field with the survey crew.

Special appreciation is extended to Mr. T. Jeff Matthews for his help in locating several sites near his home of Galax, Virginia, and to all residents whose willing cooperation made the job much easier.

An initial survey of the area was made in 1964 by Dr. C. G. Holland of Charlottesville, Virginia, but results of this survey are not yet available.

The purpose of the present survey was to locate archeological sites within the area which is to be flooded by the reservoir, and to collect material from the surface of these sites to be used in evaluating their salvage potential. Based on this evaluation, recommendations will be made for the necessary excavations and testing. The survey was largely limited to investigating plowed fields and rock shelters that could be seen through the heavy vegetation. A number of likely looking areas were in pasture and were impossible to investigate within the time available. The strategy for the survey was to cover the "bottoms", as indicated on topographic maps, as thoroughly as possible and to cover the narrow and steep portions for rock shelters by either walking or driving past.

The New River is geographically and geologically very interesting. Its headwaters are in northern North Carolina at a maximum elevation of 3,700 feet. It is just to the west of the Yadkin River drainage area. From its headwaters it follows

a northeasterly course along the Appalachian chain to a point near Radford, Virginia where it turns to the northwest across the mountains. It continues on that course all the way to Gauley Bridge, West Virginia, where the Gauley River flows into it. From that point it is known as the Kanawha River—a distance of 90 miles—to Point Pleasant, West Virginia, where it flows into the Ohio River. By virtue of its northeasterly course from Radford, the New River is the only river to fully cross the Appalachian chain from east to west.

The New River is one of the oldest rivers in the United States. It dates back to the Paleozoic era and thus is much older than the river into which it flows, the Ohio. Up until Mesozoic times it was a much longer river extending far to the west of its present mouth. The fossil river which was the extension of the New River to the west is known to geologists as the Teays River. The final destination of that river is not as yet known (Fridley, H. M., 1950).

The section of the New River in question is typical of rapid, mountain rivers with narrow valleys and steep gradients. It falls approximately 300 feet in the 50 miles covered by the survey or approximately 6 feet per mile. The largest flood plain in this area is 2,500 feet wide but most valleys are not more than 1,000 feet across. Two large floods have been recorded in this century. One occurred in 1916 and the other in 1940. They both flooded the New River near Galax, Virginia, to a maximum depth of about 25 feet above normal river level.

The rock formations in the area are entirely igneous and metamorphic. Granite, quartz, schist, gneiss, and hornblend make up most of the outcrops. Most of the granite is highly metamorphosed. The hornblend is metamorphosed to form soapstone in several places near the reservoir. No limestone was found, thus limiting rock shelters to mere overhangs with little depth. Chert is fairly abundant as an artifactual material but no quarry was located.

The flora and fauna of the area are varied in type and

abundant in number. The present-day animals include deer, rabbit, squirrel, ground hog, bobcat, bear and a few fox. In early historic times elk roamed the forest as the terrain is ideal for that species. Shrubs include various species of rhododendrons including azaleas of various colors, as well as the full-sized "mountain laurel". Trees include oak, hickory, elm, poplar, pine, spruce, sycamore, cucumber and various wild fruit trees.

The economy of the region is mainly based on farming and some fishing. Corn is the main money crop while rye and tobacco also take up some acreage. In addition, lumbering and dairy and beef cattle make up a portion of the economy.

When Europeans first settled in the valley around 1775, Indians were nowhere to be found. The only contact between White and Indian in this region was limited to Indian bands that occasionally wandered through the valley. Local folk tales about Indians are few.

The Sites

The present survey located and examined 20 sites. Of these, 19 are in Grayson County, Virginia, and one is in Ashe County, North Carolina. Eighteen are within the limits of the proposed reservoir (map p. 24). Eighteen of the sites are located on terraces near the river, and two are on hills near the river. Of the 20 sites, 12 are located near spring-fed branches and 4 others are located on dry branches which may have existed as active streams at the time of occupation. One site was a rock shelter.

44GR101

This site is situated on a hilltop near Pilgrim's Rest Church, outside the reservoir area. It was described by a local informant as a "blacksmith shop" because of the large chunks of quartz plowed up and because of the workshop material found there. Two medium-sized triangular points with contracting stems, one of which conforms to the Morrow Mountain I type (Coe,

1964, p. 38), one crude drill, and several chips of chert and quartz were recovered. The site is badly eroded and the topsoil layer is very thin. This site is not recommended for further investigation, since it will not be destroyed by the reservoir.

44GR102

This site is located near the mouth of Elk Creek on a knoll about 25 feet above the present river level. Investigation was limited to a garden plot approximately 100 feet by 50 feet. According to local informants, this garden had yielded several projectile points in the past. The survey recovered two projectile points and numerous flakes of chert and quartz. Both points were the Morrow Mountain type and were of chert. A small test pit revealed topsoil continuing to a depth of approximately 12 inches, turning to a yellow red clay. Another small knoll 200 feet to the west was also tested. There was no topsoil evident there. It is felt that litle chance exists for any material of archeological value to be found below plow zone so no further work is recommended.

44GR103

This site is located approximately one mile northwest of Oldtown, Virginia. It is at the back of a rolling terrace 400 feet from, and 10 feet above, the New River. It is situated adjacent to a small spring-fed creek and covers an area of approximately 300 feet by 150 feet. According to a local informant, it has yielded several points in the past. The survey party found a large quantity of chert and quartz chips as well as a dozen projectile points, two pottery sherds, one soapstone sherd and one engraved stone (Pl. II c, g, 1, n). The points appear to represent two separate components. The Late Archaic is represented by two Savannah River projectile points (Coe, 1964, p. 42) and the soapstone sherd. A Woodland occupation is represented by 10 medium to small triangular points and 2 potsherds. One of the sherds is quartz tempered and the other is tempered with sand. The piece of engraved stone is the only one recovered on the survey and has little diagnostic value as

far as defining a cultural affiliation (Coe, 1964, p. 53). The design is a simple crisscross or check. In view of the setting and the large surface concentration, this site is recommended for extensive testing.

44GR104

This site is located approximately two miles northwest of Oldtown, Virginia. It is in the same valley as 44GR103 which is physiographically quite similar. It is on a small spring-fed creek at the back of a rolling flood plain. A local informant said that very little artifactual material had come from that field. However, the survey did manage to collect two broken triangular projectile points and several chert and quartz flakes. This site has little salvage value and is not recommended for further investigation.

44GR105

This site is located a short distance upriver from 44GR103 and is similar to both 44GR103 and 44GR104 in many respects. Again, it is on a high portion of a rolling flood plain some 400 feet from, and 12 feet above, the river. A small spring-fed creek flows across the site. According to one local informant, several thousand points had been found in this field over the years. He found as many as 60 projectile points in one afternoon after plowing and a hard rain. As the field was in rye grass at the time of the survey, surface collecting was impossible and it was difficult to find the limits of the site. The area, however, is estimated to be 300 feet by 150 feet. A 5-foot test square was dug, half of which revealed clay underlying the topsoil at a depth of 10 inches. The other half of the square crossed a prehistoric pit which continued to an approximate depth of 30 inches. The plow zone was about 10 inches in depth and yielded 2 small triangular points, 2 quartz grit-tempered sherds, and numerous chert and quartz flakes. A slender triangular point just over 1 inch long was found at a depth of 12 inches. The 1.0 to 1.5 foot level yielded 3 projectile points, 17 potsherds, several flakes of quartz and chert, and a sample

of limonite schist of a texture suitable for making paint. (Pl. II, e, f, t). The three points included one small triangular point of chert, one medium-sized argillite point with a concave stem and one jasper point of medium size exhibiting delicate side notching. The potsherds were all quartz or sand tempered. They included incised, cord marked, fabric and net impressed, and one smoothed or plain potsherd. O sample of charcoal was taken from this level as well as several fire-cracked rocks. The 1.5-2.0 foot level yielded only three flakes, one each of chert, argillite, and quartz. In view of past surface finds by local collectors and the rich evidence found in one 5-foot square, this site is recommended for extensive excavation.

44GR106

This site is located on the left bank of the river near the old Dickenson Ferry. It is on a terrace 150 feet from the river. A spring-fed creek runs about 400 feet upriver from the site. A half-dozen projectile points, three potsherds and numerous flakes of quartz and flint were recovered. The projectile points would all appear to be of a Late Archaic-Early Woodland type. The three potsherds include two plain sherds and one fabric impressed sherd. All three are sand-tempered. A small test pit was dug revealing a sandy loam continuing to about the bottom of the plow zone and there turning to a yellowish clay. Since it is felt that the occupational material is limited mainly to the plow zone, this site is not recommended for further investigation.

44GR107

This is the one rock shelter, of some eight investigated by the survey party, that yielded any artifacts (Pl. I, b). It is located northwest of Galax, Virginia. The present surface of the shelter is about 10 feet above the river. The opening is about 12 feet across and the shelter is approximately 12 feet in depth. The roof is about 10 feet high at the opening and slopes back to floor level at the rear. A small test pit was dug in the middle of the shelter which revealed lenses of ash and

charcoal at depths of 6 inches and 10 inches, and dark soil to a depth of 24 inches. One sherd of grit-tempered pottery and one chert chip were recovered as well as a chert drill which was found in the upper lense of ash (Pl. II, a). The floor of the shelter is not littered with fallen rock as are many of the shelters in this area. Very little stone material was found other than the artifacts. In view of the artifacts recovered and the excellent position of the shelter, it is recommended for complete excavation.

44GR108

This site is located on the right bank of the river near the old Todd Ford. It is situated some 200 feet above river level and covers an area approximately 200 feet by 150 feet. It yielded two finished chert projectile points, one large argillite blank, numerous chert flakes and a few quartz flakes. The two points were very similar in style. Both are medium-sized and have deep corner notches extending well down the blade. They resemble closely the Jack's Reef Corner Notched point (Ritchie, 1961, p. 26). A small test pit was dug which revealed dark soil to 20 inches turning to clay at that point. Since 44GR109 is very similar in all respects but has a somewhat larger surface concentration and a better location it will be recommended for limited testing while 44GR108 is not recommended for further work.

44GR109

This site is very similar to 44GR108. It is located about 800 feet upstream on the same side of the river, also on a spring branch, but it is somewhat higher above the river (about 15 feet). It has a surface area of at least 100 feet by 150 feet as exposed in a plowed field, but the site no doubt extends toward the spring branch another 50 feet or so. Its position at the very head of the valley has rendered it less susceptible to erosion by direct current action during major floods. The material recovered from the surface included four projectile points, one potsherd and numerous chert flakes. (Pl. II, k).

It was noted that both these sites yielded more worked chert than quartz in spite of the fact that quartz was easily obtainable at the site while no source of chert was evident. Two of the projectile points (both of chert) were very similar to the two described for the preceding site. Of the other two, one was a small, triangular point and the other a medium-sized argillite point with a short stem. The one potsherd had a slightly roughened surface and was sand tempered. This site is recommended for limited testing.

44GR110

This site is located about 1/2 mile below the Little River on the left side of the New River. It is in a plowed field approximately 150 feet from the river and 10 feet above it. It, too, is on a small branch and is about 100 feet by 100 feet in area. Two small triangular points, one a large, Late Archaic form, and one small, short and stemmed were found as well as numerous flakes of quartz and chert, and one quartz grit-tempered potsherd. Since the concentration was rather limited and the location subject to frequent river flood erosion, no further work is recommended.

44GR111

This site, located on the right side of the Little River about one mile above the mouth, is on a terrace and varies in elevation from about 8 to 20 feet above the river level. A small branch runs through the site. The occupation area is composed of soils that are black and reddish in color. The area of the site is about 300 feet by 150 feet. The survey recovered eight projectile points and numerous quartz and chert chips (Pl. II, j, m). Of the eight points, six were of a local stone similar to argillite. One was jasper and the last was of quartz. Five of the eight would fall in the Late Archaic types of large, broad base points while two of the remaining three would fall into the Morrow Mountain class. The last, the jasper point, is not complete and cannot be identified. Several projectile point blanks were also recovered. No pottery or any other evidence

of later cultures was found. This and the following three sites are in the Little River's only large valley. They all appear to represent at least a Late Archaic, and in some cases even earlier, occupations. It is felt that this site represents the best chance for a sampling of the valley and it is recommended for extensive testing.

44GR112

This site, located just above 44GR111, is near a spring branch on a gently sloping terrace averaging about 10 feet above the river. The site is limited to an area of 200 feet by 100 feet at the mouth of the branch. Three crude points, several blanks, two potsherds, and numerous flakes of quartz and chert were found. The three crude points are rather hard to assign to a time period but could be Early Woodland. The two potsherds are sand tempered with fabric impressed marks on the surface. This site is not recommended for further work.

44GR113

This site is located just downriver from 44GR111. It is also situated on a spring branch on the same terrace as the previous two sites. Several broken points and blanks of Late Archaic-Early Woodland origin were recovered as well as one sand tempered potsherd, one noded rim sherd from a soapstone vessel, and numerous flakes of chert, slate, argillite and quartz. A number of possible hammerstones and large pieces of milky quartz were found at this site. As far as could be determined from one small test pit, the site does not go below the plow zone and is not recommended for further work.

44GR114

This site is located directly across the Little River from 44GR113. It covers an area approximately 400 feet by 200 feet, spanning the distance between two spring branches. The lower portion of the site is 50 feet from the river and 10 feet above it while the upper portion of the site extends back about 200 feet and is about 25 feet above water level. A hill rises 150

feet just behind the site. The area seems to be well protected from heavy flooding, at least in its upper reaches. More stone artifacts were recovered from this site than from any other on the survey. Portions of 28 projectile points and fragments of three axes were collected as well as about 20 potsherds and one soapstone sherd (Pl. II, d, p, s). The projectile points include two Guilford types (Coe, 1964, p. 40), several Savannah River types, and numerous smaller specimens that are probably Woodland. One of the axes is highly polished, one is smoothed, and the other is only roughed out. The potsherds include net and fabric impressed wares and are quartz, grit and sand tempered. Several hundred flakes of various rocks, mostly quartz and chert, were also recovered. Several small test pits were dug about 20 feet above the water in the area of heaviest concentration. Each revealed clay at a depth of 10 inches. One small test trench was dug near the upper of the two branches. It revealed sterile silt to a depth of 16 inches with sand going down to a depth of 20 inches. At that point a dark soil was found. The first six inches of this soil yielded a worked piece of flint and several chunks of old iron and slag. It was learned from the owner that a forge had been located near the site around 1890, thus accounting for the slag. The floods of 1916 and 1940 had deposited the silt forming the sterile layer above the deposit of dark soil. The second six inches of the dark soil was very rocky. It appeared to be a streambed deposit but another possibility exists. According to the owner, Negro slaves had dug several ditches in that area and had lined them with rocks. The test trench was abandoned at the bottom of the second six-inch level of dark soil. Despite the limited testing carried out by the survey, it is felt that this rich surface site could have a significant buried deposit. Therefore, some further limited testing is recommended.

44GR115

This site is located below the Old Penitentiary Ford on the right bank of the New River and sits on a knoll approximately 15 feet above the water. The knoll separates the river from

what appears to be an old channel. The area of concentration is about 200 feet by 150 feet. Portions of at least 15 projectile points were found as well as several blanks, 2 quartz tempered potsherds and numerous flakes. In contrast to 44GR108 and 44GR109, the artifacts from this site were more frequently made from rocks of local origin. Argillite and quartz made up most of the collection with very little chert being found. Several of the points are Late Archaic types, while others are Woodland in style. The site was tested in several places. Sterile sand was found down to a depth of 20 inches in one test near the river, and a brownish silt continued down to clay at a depth of 10 inches in another test. It is felt, in spite of the large surface concentration of points, that this site is too shallow to be of any salvage value and, therefore, no further work is recommended.

44GR116

This site is located on the right side of the New River, well above the reservoir area on road 707, about one mile from the concrete bridge. It is near a small, but active springhead. The vicinity of the springhead was not plowed but could well be part of the site as well as the 50 foot by 50 foot portion of plowed field which is designated as the site. Portions of five projectile points as well as two potsherds and numerous quartz and chert chips were found on the surface. The points vary from Late Archaic to Late Woodland types. The latter is represented by two small, triangular examples. The pottery is sand tempered with a fabric impressed surface. As this site is above the reservoir, it is not recommended for further investigation.

44GR117

This site is located just downriver from the concrete bridge on road 707 on the right bank of the New River. It is situated about 15 feet above the river, some 400 feet from it, and is approximately 200 feet by 100 feet in area. A dead spring is located 100 feet directly behind the site.

The most interesting aspects of the site are its location and the depth of the deposit. Dark soil goes to a depth of 30 inches before it turns light into an undetermined material. The site is situated at the back of a valley which is approximately 1,500 feet wide from rim to rim. The site is opposite the cut bank side of the river and therefore has, no doubt, received silt and sand deposition during floods.

Three projectile points, six potsherds, and a few chips were recovered (Pl. II, b). The three trianguloid points ranged from medium to small in size and appear to be of Woodland origin. The potsherds are grit tempered with fabric impressed surfaces.

This site is recommended for limited testing.

44GR118

This site is located in the same field as 44GR117 and is situated about 200 feet from the river on a small knoll which rises above the surrounding terrace. The area of concentration is approximately 200 feet by 100 feet. Three triangular points, the base of a large, Late Archaic point, some twenty potsherds, a crude drill, a hammerstone and numerous chert argillite and quartz flakes were recovered from the surface (Pl. II, o). The potsherds are grit and sand tempered with fabric impressed, net impressed, and incised exterior surfaces. A small test pit was dug and clay was found at a depth of 10 inches but a pit with pottery and chert chips was found which went deeper. It must be mentioned that the surface of the entire field had a heavy concentration of chips, points, and potsherds; 44GR-117 and 44GR118 are merely local concentrations. In view of the pit, revealed by the testing and the rather heavy concentration of surface material, this site is recommended for extensive excavation.

44GR119

This site is located on the right bank of the New River near the mouth of Peach Bottom Creek. It is situated at the

mouth of a small spring-fed creek, about 15 feet above the river and covers an area of approximately 300 feet by 200 feet. Five small triangular points, one drill, about thirty potsherds and numerous flakes of chert and quartz were found on the surface (Pl. II, r). The potsherds are net and fabric impressed and cord marked with quartz, grit and sand being the predominant tempering materials. A small test pit revealed dark soil continuing to a depth of 15 inches before turning to a light clay. The site is recommended for limited testing.

31AS101

This site, located on the left bank several miles below the fork of the New River, is situated on a terrace approximately 15 feet above the river in a valley which is about 1,000 feet wide (Pl. I, a). The field is covered with a mantle of sand which, according to a local informant, was deposited by the flood of 1940. Here and there, the sand cover is thin or absent so that the original black soil is evident. These outcrops are usually the heaviest areas of artifact concentration. Two such areas in particular were located by the survey. Altogether six triangular points, four points of probable Archaic origin, fifty potsherds and numerous chips of flint, argillite and chert were found on the surface (Pl. II, h, i, q). One of the Archaic points is a Savannah River type, one is a Palmer Corner Notched type (Coe, 1964, pp. 67 and 69), and two are of a type that resemble in outline the Morrow Mountain point, but which exhibit better workmanship and are somewhat smaller than the type example. The same style of point was found by Carl Miller at Russell Cave. It is a widespread, though not abundant, type in the Eastern United States. The potsherds are largely fabric impressed. However, some net impressed as well as cord marked and incised treatment is noted. Grit and sand are the predominant tempering materials. In view of the concentration of artifacts, this site is recommended for extensive testing.

Summary

Of the twenty archeological sites recorded by the survey

party, further work is recommended for ten. The sites selected for testing and excavation have extensive surface concentrations of archeological materials and occupy promising locations. They are distributed rather evenly along the expanse of river bottom and thus should provide data for a good distributional study of this heretofore unknown archeological area. The work recommended for each site is summarized below.

Site	*Additional Work*	*Site*	*Additional Work*
44GR101	Out of reservoir	44GR111	Extensive testing
44GR102	None	44GR112	None
44GR103	Extensive testing	44GR113	None
44GR104	None	44GR114	Limited testing
44GR105	Extensive excavation	44GR115	None
		44GR116	Out of reservoir
44GR106	None	44GR117	Limited testing
44GR107	Complete excavation	44GR118	Extensive excavation
44GR108	None	44GR119	Limited testing
44GR109	Limited testing	31AS101	Extensive testing
44GR110	None		

It is recommended that a full season of three months of intensive field work be conducted in the area to be flooded by the two reservoirs of the Blue Ridge Development Project 2317. An archeologist with a crew of ten men should devote this time to: (a) testing and excavation of the ten sites recommended in this report, and (b) additional survey of the area to locate possible sites not discovered in the initial, brief survey. In addition, the archeologist, with a half time assistant, should spend approximately nine months in analysis of the recovered materials and in the preparation of a report. The minimum cost of this operation is estimated at $11,000.00.

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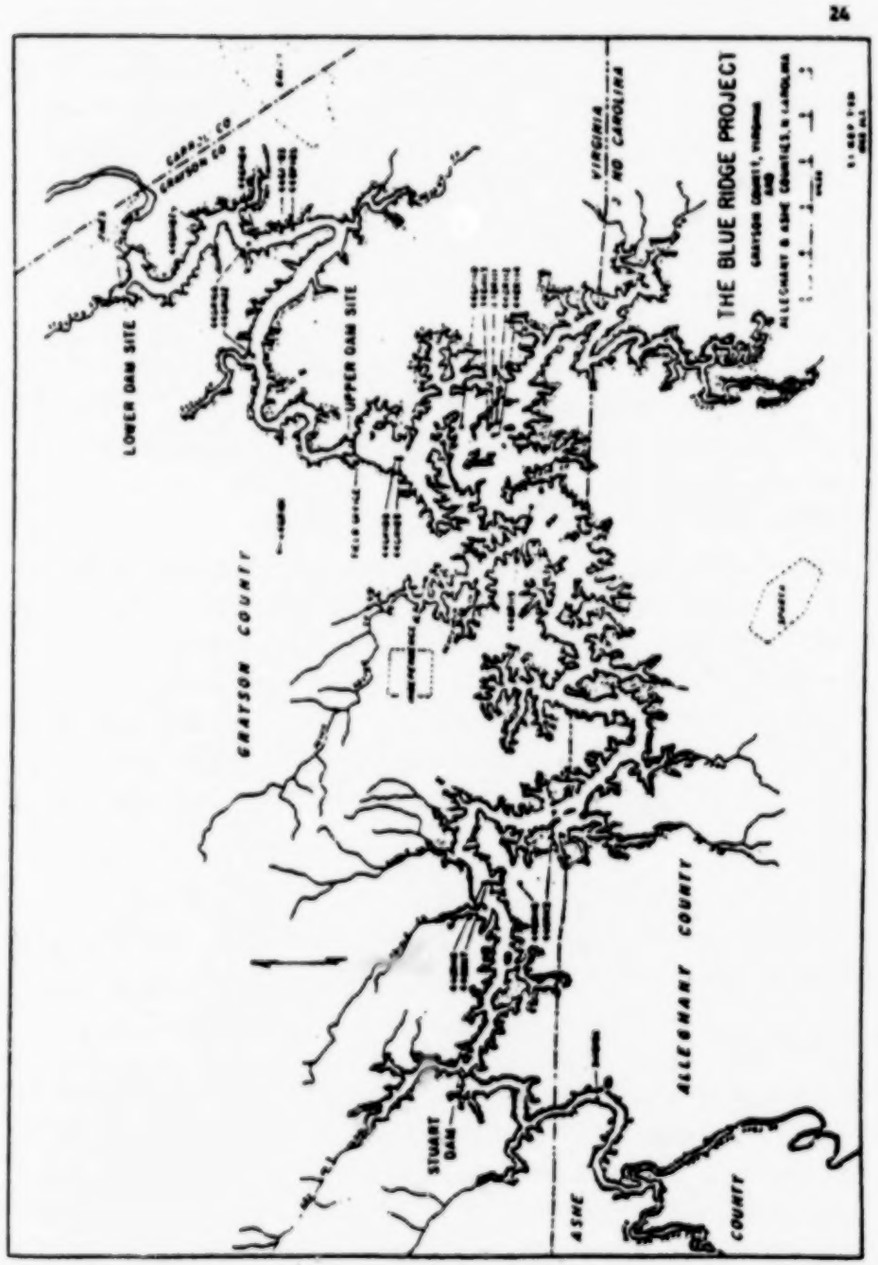

Plate I

a. View of site 31AS101, an open village site.
b. View of site 44GR107, a small rockshelter.

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DRAFT

Comments by Interagency Archeological Services on the Status of Archaeological Research in the New River.

Background

On March 24, 1976, the United States Court of Appeals reviewed the Federal Power Commission's (FPC) permit to the Appalachian Power Company (APC) for the construction of two dams on the New River, in Virginia and North Carolina. Issuance of the permit was contingent upon Appalachian Power agreeing to provide the necessary time and funding for archeological excavation and salvage prior to dam construction. This approach to the protection of cultural resources is contrary to those normally favored by the Department of the Interior (DOI) and by the national archeological community, and to the overall spirit of the environmental and historic preservation statutes. It also has significant technical and fiscal ramifications of which FPC may not be totally aware. Our comments are divided into four major sections. First, we discuss the procedural approach that APC used in locating and assessing the significance of cultural resources in order to provide data to FPC pursuant to the latter's National Environmental Policy Act (NEPA) and National Historic Preservation Act (NHPA) responsibilities. Second, we provide a synposis of known archeological data about the project's area of environmental impact, together with an evaluation of the adequacy of these data. Third, we summarize the impact of the project on known and probable archeological resources and the significance of the area for future archeological research. Fourth, we offer comments on further work that should be done in order to fully assess and, potentially, to mitigate impacts on archeological resources. These comments are segregated into (a) recommendations assuming the dams are constructed and (b) assuming the area is declared a Wild and Scenic river. Very rough estimates are also provided.

Procedural

[The APC did not provide FPC with data of sufficient quality or detail to permit FPC to meet its archeological responsibilities under NEPA and related policies.] FPC's basic responsibility is to identify and evaluate those cultural resources which may be affected by the project area so that these resources can be taken into account in the planning process. Our discussion will focus on the procedures employed in the preparation of the 1973 Final Environmental Impact Statement: Modified Blue Ridge Project No. 2317—North Carolina/Virginia. The two more recent Environmental Impact Statement's (EIS) will not be considered since they are unavailable to this office. Since there has been no additional archeological work in the area since preparation of the first EIS, we assume that the following observations are valid.

At the time that the EIS was prepared the following regulations were in affect to direct the FPC in its approach to cultural resources: NHPA of 1966 (Public Law 89-665), NEPA of 1969 (Public Law 91-190), and Executive Order 11593. Guidelines for the discussion of cultural resources in the preparation of EIS's were available from the National Park Service. Since that time the Advisory Council's "Procedures for the Protection and Enhancement of Historic and Cultural Properties" (36 CFR 800) and the Archeological and Historic Preservation Act of 1974 (Public Law 93-291) have come into affect.

COMPLIANCE WITH SECTION 106 OF NHPA

FPC fulfilled its responsibilities under Section 106 of the NHPA by consulting the National Register of Historic Places. The Advisory Council on Historic Preservation (ACHP) (p 133) cautioned FPC that there were two National Register sites in the vicinity of the project, and that FPC should insure that they were not affected by adverse secondary impacts.

COMPLIANCE WITH NEPA AND EXECUTIVE ORDER

[The FPC did not fulfill its responsibility to locate and evaluate cultural resources under NEPA. FPC's approach, instead, was to call for the identification of such resources after the permit was granted. This, of course, would not allow consideration of cultural resources in the project planning process, or in the decisionmaking process of the FPC as stipulated by the EIS Guidelines set forth by Council on Environmental Quality (CEQ) (40 CFR 1500.1 (a)).]

The following agencies commented that the FPC had not adequately considered cultural resources:

a. The ACHP (p 303) stated that it did not have sufficient information to evaluate the project's impact on cultural resources and that the EIS should include evidence as to whether or not cultural resources would be affected.

b. The DOI (p 318) stated that "it is highly important that a professional archeological survey be made to establish the presence or absence of archeological sites." The DOI also pointed out that compliance with Section 106 does not constitute compliance with Executive Order procedures to locate and identify sites which may be included in or eligible for inclusion on the National Register.

c. The comments of Grayson County, Virginia, Ashe County, North Carolina and Alleghany County, North Carolina indicated that "the one million year old New River is of historical value and should not be replaced or destroyed by a dam" (p 427). The counties also commented on the applicants' unconcern for the social integrity of the area's historic communities, asserting that the APC had shown "historical indifference and insensitivity . . . to the welfare of the individuals who will be flooded out" (p 424).

The FPC staff comments illustrated a lack of regard for architectural, historical and archeological resources at best. The staff failed to even mention that two cursory and incomplete surveys for archeological resources had been undertaken in the project area (see below). While the staff indicated that it had contacted the SHPO's in North Carolina and Virginia for comments, the record shows (pp 61-62) that the staff solicited data only on historic structures, National Register Properties, and landmarks rather than on the full range of cultural resources. The replies from the SHPO's were not made part of the EIS, so we do not know the nature of their replies.

The staff's comments on pages 87 and 92 clearly reflect a poor comprehension of statutory and professional requirements for the identification and protection of cultural resources. As noted, it is necessary to systematically locate and evaluate such resources before decisions are made that commit the agency to the undertaking. The staff, however, has merely consulted the National Register and contacted the SHPO's, and recommends that an archeological survey be undertaken *after* the permit is

issued, "since there would be adequate time during the construction schedule for both a survey and needed salvage." This approach, of course, would commit the FPC to the "salvage" and destruction of the area's cultural resources without even first ascertaining the nature of these resources.

The Circuit Court decision to permit FPC to license the project does not fully address FPC's cultural resource responsibilities under NEPA or other statutes and policies. The decision states only that "Appalachian (will) provide for the necessary time and funding for complete research, excavation and salvage as a condition of licensing." We doubt that the pertinent legal issues were adequately presented to the court by the appellants, however. In other cases, in which such issues have been fully presented, courts have typically held that cultural resources like other environmental resources, must be dealt with in the preparation of EIS's on the basis of systematically gathered factual data.

Proper methods by which to approach cultural resources in the planning process, according to the standard procedures used by this office in advising and reviewing the programs of federal agencies, are as follows:

1) Locate and identify cultural resources by:

a. checking the National Register and its periodic supplements, as well as other available data on known or possible cultural resources, and consulting with the SHPO's and

b. if the environmental impact area of the project has not already been fully surveyed, undertaking an on-the-ground cultural resource survey.

If the project is in the early planning stages and several alternatives exist a predictive reconnaissance should be completed.

If the final location selection has been made an intensive survey should be undertaken of the entire project area.

2) Evaluate all cultural resources in terms of the National Register Criteria (36 CFR 800.10), and determine what effects the project will have on them.

3) Consider what actions can be taken to avoid or mitigate any adverse effects. "Salvage" study of cultural resources is only one, relatively undesirable, approach to mitigation.

4) The value and preservability of the resources should then be taken into account during decisionmaking. In the case of FPC the permit should be evaluated in light of its effect on cultural resources.

5) If the permit is issued, a condition should be included stipulating adherence to a mitigation plan developed by the agency, the SHPO, and the ACHP pursuant to the latter's Procedures (36 CFR 800).

Synposis of Survey Data

Two limited, unsystematic *surveys* (Ayres 1965 and Holland 1969) have been conducted within the reservoir area for the specific purpose of locating prehistoric sites which may be endangered by inundation. In addition, Holland (1964) inspected portions of the area as part of a regional study of the prehistory of SW Virginia, not aimed at locating endangered sites. A study by Purrington (1974) has been cited in the DOI EIS as applying to the reservoir area. This is incorrect: Purrington's study was done on the South Fork of New River, North Carolina, upstream from the reservoir area. However, because of close proximity of his study area to the reservoir area, his findings will be considered in our evaluation.

In total, 65 prehistoric sites and 11 fish weirs (some probably historic) have been located on the New River within the project impact area by the three studies to date. Data on these sites are preserved in Table 1. These studies involved no more than 30 person-days in the field. By and large, the archeologists merely inspected plowed fields on the New River floodplain.

(8000 B.C.) through Late Woodland Periods (1400 A.D.) have been discovered in the New River Valley. There is also some evidence collected by Purrington that deeply stratified Paleo-Indian (ca. 8-10,000 B.C.) and Early Archaic sites exist in the Valley.

Settlement types in the New River floodplain range from small Archaic period maps to large Late Woodland villages, in addition rock shelters have been found along the steep slopes, within the floodplain area. Specialized prehistoric sites such as fish weirs are located along the narrow and flat bottom streams which flow into the New River. Local collectors report finding artifacts on hills and ridges, but it is not known what kinds of prehistoric activities these finds represent. Purrington (1976) reports a predominance of Archaic sites upstream from the Reservoir, while Holland (1969) reports mostly Late Woodland sites within the Reservoir area. This distinction, however, may reflect the research interests of the two investigators rather than the actual distribution of sites.

These data together with historic data on more recent occupation by Euro-Americans, indicate that the New River Valley has been occupied over the entire span of human history in the eastern United States and that this occupation has been characterized by variety in settlement pattern and use of natural resources. Thus as an initial indicator of the area's significance for scientific research, we can observe that it contains an apparently unbroken record of mankind's changing adaptations to the changing natural environments of the Appalachians. Through careful analysis, it should be possible to describe changes in settlement types, exploitation of natural resources, and the organization of society, through some 12,000 years of prehistory and history, and to compare these changes with reconstructed changes in the natural environment. These reconstructions can be used as tests of anthropological and historical ideas about how and why cultures change generally.

A more specific research topic that could be addressed using

No attempt was made to locate buried sites (common occurrences on floodplains) or to ascertain the subsurface nature of the sites that were discovered. Little effort was made to inspect areas lying beyond the floodplain. Little information is available on the inspection methods employed, but the expenditure of only 30 man-days on the 12,650 acres of floodplain would require that each surveyor inspect 421.7 acres per day. In contrast, archeologists with the North Carolina SHPO estimate that in a systematic surface survey of floodplain lands in this general area, a surveyor can be expected to accurately inspect an average of about 10 acres per day. The North Carolina figure is similar to estimates given by other experienced modern archeologists in the Atlantic states. Thus we must assume that the Holland and Ayres studies involved only the most cursory inspection of the floodplains, and even less and virtually no inspection of other areas in which prehistoric sites can be expected to occur. (Ridge crests, terraces, spring areas, caves and rockshelters, etc.)

Moreover, no effort was made by any of the archeologists working in the region to locate or evaluate historic archeological sites. Although settlers entered the area at least by the mid-eighteenth century, and although over many generations local groups developed distinctive social customs and patterns of interaction important for both anthropological and historic research, nothing is known of the area's historic archeological resources.

In short, it is apparent that an intensive archeological survey to locate and identify cultural resources which may be affected has not been completed. The studies have been only cursory, and many significant historic and prehistoric archeological sites remain to be identified. Our discussion of the area's potential significance is necessarily limited by this very incomplete data base.

The studies completed by Holland and Ayres have demonstrated that archeological sites ranging from the Early Archaic

the prehistoric resources of the New River Valley has to do with the connections between economic and political developments among human societies. During the Middle Woodland period (300 BC-700 AD), the "Hopewell Interaction System" was operating in the eastern United States. This was a long-distance trade network that was intimately related to the rise of complex forms of political organization among the societies of the Ohio and Illinois River drainages. Study of the Interaction System is of great importance to understanding the development of the Hopewell societies and to the study of the general relationships between social organizations and economics. Much of the trade that typified the Interaction System involved the transport of Southeastern goods into the Midwest and vice-versa. The New River is one of the major natural corridors between these two areas, and prehistoric ceramics from both areas occur in archeological sites in the New River Valley. Thus a study of the New River's prehistory may shed very significant light on the dynamics of the Hopewell Interaction System, as well as on other patterns of trade, population movement, and social interaction between the Atlantic coast and the Midwest during other time periods.

Construction Impact

The construction of the proposed dams on the New River will have major adverse effects on the cultural resources. First, of course, the 65+ known prehistoric sites, at least 28 known historic cemeteries, and some 30 known historic occupation and manufacturing sites will be destroyed by inundation, land-clearing prior to inundation, wave erosion at the pool edges, etc. Since the pool areas have not been fully and systematically surveyed, the total number of properties to be lost cannot be calculated.

Inundation is not ordinarily considered a protective measure. Little is yet known about the effects of inundation, but it is known that fragile structural remains, preserved floral, animal, and human remains, and the chemical constituents of archeological sites are likely to be altered or destroyed. Wave action along the changing shoreline also erodes sites, and of course, bulldozing for construction and clearing of vegetation is very destructive.

In addition to those properties lost to construction and filling of the reservoirs themselves, an unknown number of historic and prehistoric resources will be destroyed by park facility construction, road relocation, transmission line construction, etc. To the extent that the reservoirs encourage increased recreational use of the area, we anticipate increased destruction of archeological sites through vandalism. To the extent that the reservoirs change the distribution of local population, by forcing relocation of people now living in the valley and/or by encouraging new residence in the area, we can expect that cultural resources will be destroyed by the construction of private housing and attendant service facilities. The historic archeology of the region will be further impacted by the relocation of local families, since the social traditions of these people—which are vital to an understanding of the archeological record—will inevitably be adversely affected by their removal from their ancestral lands.

Finally, the impact of the project on archeological resources must be seen from an areal perspective. A large number of archeological resources have already been destroyed by reservoirs within a one hundred mile radius to the northwest, south and southeast of the proposed dam project. Many tributaries of the New River have been dammed. In all of these cases there has never been a fully adequate program of research and preservation to mitigate impacts.

Thus the research value of the New River Valley, and the significance of its possible loss to science, are substantially increased by the fact that the valley's resources remain relatively intact while hundreds or perhaps thousands of such resources in adjacent portions of the Appalachians have already been destroyed without proper study.

Recommendations

The most effective approach to the management of archeological resources in the New River Valley would be to preserve the area so that careful research could be conducted over a long period of time, allowing careful decisionmaking and feedback as studies proceed.

As matters now stand, unless Appalachian Power Company (APC) is required to perform a very complete and systematic program of survey and study, addressing resources subject to both direct and secondary impact, the archeological record of the region will be effectively destroyed.

In this section we will give recommendations and gross cost estimates for the archeological work given that a) the dams are built and b) the area is declared a Wild and Scenic River.

New River Power Project

A. APC will need to fund an intensive field survey and literature check of the entire primary impact area, which includes the flood pools, easement areas, proposed state parks and transmission line corridors, road and residence relocation areas, etc. to locate and evaluate prehistoric and historic archeological sites.

1. Full background research will be needed to provide a framework for identification and evaluation. This will involve a systematic study of local natural environments and environmental history, ethnography, ethnohistory, and history, as well as consultation of existing inventories of historic and prehistoric properties.

2. The entire land area should be inspected by a properly qualified archeological team, including both historic and prehistoric archeologists.

a. on terraces and flood plains, surface inspection of all open land surfaces should be supplemented with ground clear-

ing and subsurface testing in overgrown areas, and hand on mechanical deep testing where silt has accumulated.

b. rock outcrops and steep slopes should be inspected for rockshelters.

c. in areas where buried sites are unlikely, it may be sufficient to simply inspect plowed fields and walk transects across overgrown areas digging periodic test pits.

B. Once prehistoric sites are located, subsurface testing will usually be necessary to:

1) determine horizontal and vertical limits

2) determine the presence or absence of subsurface features

3) sample of artifactual materials

C. Historic sites will often require the same or similar operations, and sometimes will require architectural evaluation. In cases where background ethnographic research has indicated that living people have substantial information about particular properties, interviews will be necessary to elicit these data.

D. All sites should then be evaluated with reference to the National Register criteria set forth at 36 C.F.R. 800.10, and determinations of eligibility should be obtained from the Department of the Interior.

E. Gross estimated survey and evaluation costs are given in Table 2.

F. The FPC should then execute a Memorandum of Agreement with the Advisory Council according to the "Procedures for the Protection of Historic and Cultural Properties" (36 CFR 800). This memorandum should detail a plan for mitigating all adverse impacts on properties qualifying for the National Register. Components of the plan will naturally depend

on the nature of the properties, but some expectable components include:

1. Systematic archeological excavation of historic and prehistoric sites, including analysis and publication.

2. Detailed surface mapping of historic sites, recovery of subsurface materials, analysis and publication.

3. Recovery of detailed oral data on historic sites and their social contexts from local residents and others.

4. Curation of resulting data and material.

5. Reburial of human skeletal material.

6. Landscaped covering, stabilization, and/or fencing of sites subject to vandalism.

G. Mitigation costs cannot be reliably projected at this time. For comparative purposes, however, we can point to Lake Sonoma, a Corps of Engineers project in California of much smaller size and complexity than the proposed New River project. The Corps of Engineers projects archeological mitigation costs of almost $3,000,000.00 at Lake Sonoma. We would not be surprised at costs ranging between $5 and $10 million at New River.

The Wild and Scenic River Proposal

The designation of the Section of the New River in North Carolina as a Wild and Scenic River is very much preferable to the proposed New River dams from an archeological standpoint. We agree with the Advisory Council's statement in the Final Environmental Impact Statement on the Proposed Wild and Scenic River that:

> "Declaration . . . would allow the orderly and systematic survey and inventory of historical, archeological and cultural resources of a large area which has not been adequately surveyed . . . this declaration . . . would allow the preservation of potential significant sites for research, interpretation,

> and enjoyment for future generations" (p. 285). Furthermore, the DOI has stated that the State of North Carolina would be responsible for undertaking the survey to locate the cultural resources. This would allow North Carolina to develop a long term plan for a study of the area, similar to that proposal on the Buffalo National River by the DOI, National Park Service. In this manner North Carolina would not be unduly burdened by the costs of undertaking the study immediately, and the study could be done in a more orderly fashion.

However, this designation would not protect cultural resources in the Virginia section of the New River. Th resources would be subject to neglect and continuing destruction by vandalism and erosion. This would still be preferable to the dam construction, of course, but Virginia should undertake a comprehensive long term survey in the region.

A systematic study of historic archeology has never been done in the New River area, but the historic resources of the region appear to be very rich. Details on local history and historic properties are provided by the Office of the National Register. In general, however, we can observe that the area has been occupied by Euro-Americans since at least the middle of the 18th century, and that local settlement patterns have tended to be characterized by small, family-based population clusters, associated with agricultural or small-scale manufacturing activities. Known types of historic sites of archeological importance include:

1. Occupation sites—standing and ruined residences with associated outbuildings, fields, refuse deposits, etc. Such sites yield data on social organization, interactions with the natural environment and with other social groups, etc.

2. Manufacturing sites—mills, etc. provide information on changing manufacturing practices and the sorts of people and organizations associated wih such practices.

3. Cemeteries—at least 28 known cemeteries lie within the

pool area alone; these appear to be, for the most part, small family plots. The study of cemetery organization, revealed by the nature and distribution of gravestones and other surface features, can provide vital information about social organization, world view, etc. Subsurface cemetery features can provide still more information, but of course, cemeteries are rarely studied except when they must be excavated for relocation purposes.

4. Population centers—Such centers as Wilson's Mouth can provide data on economic and other interaction patterns among the area's residents.

Data in historic properties are contained not only in the structures, artifacts, and refuse that constitute the property itself, but in the distribution of such phenomena and in the people of the area who still use the properties or remember when they were used. Many historic properties in the area have been in the same family's hands for many generations, and thus potentially contain a wealth of oral and documentary historic information of great research importance. The Appalachian hill country is of considerable current interest to anthropologists and sociologists, who regard the isolated valleys as natural laboratories in which one can observe a wide variety of approaches to coping with the natural and social environment by the small occupant societies. Observing these attempts to adapt through time and in a comparative framework, it is possible to assess the relative successes and failures of different systems of social organization, personal interaction, economic development, and life style. Relatively undisturbed valleys like that of the New River, with both historic sites and their occupants still in place, are of great potenial value for such studies.

At the present time, the State of North Carolina is in the process of nominating at least 18 prehistoric sites within the New River area to the National Register of Historic Places. These nominations are based on the Holland/Ayres data, and representatives of the SHPO indicate a strong belief that many

more National Register-eligible properties would be found if (a) more adequate data were available on the sites that Holland and Ayres recorded, and (b) an adequate survey of the area were done. No historic properties have as yet been nominated, because of the total lack of survey data.

Site Summary - New River Impact Area

Holland-1969

Site No.	Landform	Area (feet)	Cultural Affiliation	Recommendations	Comments
ALL-A	t	120x30	LA,W	test	
ALL-B	fp	300x75		-	
ALL-C	t	30x60	A	-	camp
ALL-D	fp	5280x1000	MA,W	excavate	several loci
AS-A	t	75x75	W	excavate	farmstead or village
AS-B	t		MA,W	test	
AS-C	fp	300x60	MA,W	excavate	discrete houses, large village
AS-D	fp		MA,W	-	
AS-E	t		W	test	peripheral village
AS-F	t	600x30	A,W	-	2 areas
AS-G	t	600x60	W	excavate	village
AS-H	t		W	test	satellite village
AS-I			A,W	-	
AS-J				-	
AS-K				-	
AS-L	t			-	
GY-A	fp			-	
GY-B	t	200x50	A,W	test	
GY-C		20x10		excavate	rockshelter
GY-D	t		MA,W	test	
GY-E	r	75x	A	-	camp
GY-F		60x	MA	-	
GY-G	t	60x45	A	-	camp
GY-H	fp	60x45	MA	-	camp
BY-I	t	2640x30	W	excavate	large village
GY-J				test	rockshelter

t = terrace
fp= floodplain
r = ridge

A = Archaic
EA= Early Archaic
MA= Middle Archaic

LA = Late Archaic
EW = Early Woodland
W = Woodland

Holland-1969

Site No.	Landform	Area (feet)	Cultural Affiliation	Recommendations	Comments
GY-K	t	600x30	W	test	
GY-L	t	600x30	MA	test	
GY-M	t	105x30	EA	test	
GY-N	t		MA	-	
GY-O	t	200x	W	excavate	
GY-P	R	150x60	MA	-	
GY-Q	R	75x45		test	
GY-R	R			-	
GY-S	t	150x150	EA,MA	test	
GY-T	fp	105x105	A,W	-	
GY-U	R	30x30	A	-	
GY-V	R		A	-	
GY-W	t	300x150	A	test	large site
GY-X	fp	225x30	MA,W	-	
GY-Y	R	60x45	MA	survey	
GY-Z	t	150x30	A	test	camp

*not included--11 fish weirs

Holland-64

ALL-1	t		W		
ALL-2	R				
GY-1	t	150x150	W		large village
GY-2A	R	90x90	A		
GY-2B	R	90x90	A		
GY-2C	R	90x90	A		
GY-2D	R	90x90	A		
GY-3		30x4	W		rockshelter
GY-4	fp	60x30	W		
GY-5	t	30x30	A		camp
GY-6(44GR114)	fp	60x60	W		possible
GY-7(44GR111)	t	60x60	W		small village
GY-8(44GR112)		60x30	W		complex

Site No.	Landform	Area (feet)	Cultural Affiliation	Recommendations	Comments
Holland-64					
GY-9	t	300x30	W	out	
GY-10			A,W	-	rockshelter burial
GY-11	t	90x30	A	out	
GY-12	t	90x120	A	-	soapstone quarry
GY-13			A,W	out	
GY-14	t	60x60	W	-	
GY-15A & 15B	t	225x75	W	out	burials
GY-16	fp		W	-	
GY-17	fp		W	test	
Ayres-65					
44GR101	R		W	-	
44GR102	t	100x50	PA	test	
44GR103	t	300x150	LA,W	-	
44GR104	fp		W	test	
44GR105	fp	300x150	W	-	
44GR106	t		LA,EW	out	
44GR107		12x12	W	-	rockshelter
44GR108	t	200x150		test	
44GR109	t	200x100	LA	-	
44GR110		100x100	PA,LA	test	
44GR111(GY-7)	t	300x150		-	
44GR112(GY-8)	t	200x100	LA,EW	-	
44GR113	t		A,W	test	
44GR114(GY-6)		400x200	LA,W	-	
44GR115	t	200x150	LA,W	out	
44GR116		50x50	LA,W	test	
44GR117	t	200x100		excavate	pit
44GR118	t	200x100	A,W	test	
44GR119	t	300x200	W	test	
31AS101	t		EA,LA		

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Perspectives

The Apco Dams Affair

Dear Sir:

The Washington Post reported on 12 December 1974 that the Appalachian Power Company (Apco) had won a major victory in its multiyear fight when the House of Representatives killed a proposed two-year study of New River in southwestern Virginia and northwestern North Carolina where Apco intended to build two dams that would flood 36,000 acres and back water behind the dams for 67 miles. The Senate had approved the study which, in Apco's opinion, would effectively kill the $430,000,000 hydroelectric project. The major hurdle was opposition from North Carolina and other interested groups appealing the Federal Power Commission's licensing of the project. These wanted the area placed in the National Wild and Scenic Rivers System.

In the process of getting its license, Apco had two archeological surveys made. The first was by Harvard Ayers in 1965 who was then employed by the River Basin Surveys of the Smithsonian Institution. Apco enlarged its plans, calling it the Revised Blue Ridge Project, and in 1969 I surveyed the reservoir for ten days. Robert Poole, a reporter for the Winston-Salem Journal, and E. W. Kenworthy, a reporter for the New York Times, examined the Federal Power Commission's (FPC) records and discovered that no mention of these surveys had been made by Apco, but, as a routine procedure, the FPC had added to its report two amounts, $5,000 at one point and $7,500 at another, for archeological surveys. Ayres and I each had been paid $500 plus expenses. This lack of survey reports is now a part of North Carolina's petition to the FPC to set aside or modify Apco's license. Depositions have been secured

from Bob Poole concerning his investigations and from me as to the importance of the reservoir area to prehistory.

The New River of southwestern Virginia and northwestern North Carolina is in an area of mounds, large stockaded villages, cave burials, fertile alluvial plains, productive forests, grasslands where buffalo and wapiti roamed, salt licks where they were killed, and which itself had abundant shellfish and fish. Sytematic exploration began around 1890 when Henry Mercer asked the question: did early man in North America cross the Appalachians in geologically remote times or as late as 1370 A.C.? He conducted his investigations by excavating caves, being stimulated to do so by startling reports from Europe. One cave he excavated was Castle Rock in Giles County, Virginia where he found but did not recognize what is probably the first evidence of "archaic" levels in an excavation. His survey began near Austinville, Virginia on the New River and continued down the Ohio. We have only brief reports from this study. Ralph Solecki, in 1948, investigated the Bluestone reservoir at the Virginia-West Virginia border. He spent two months and three days in the field, found 28 reservoir sites, and with one or two local helpers dug test pits in three sites. Further upstream, near Radford, Virginia, is Claytor Lake. It is fifteen miles long and so far as I know was never surveyed archeologically. I was told by local informants when I did a general survey of southwest Virginia in 1963 that artifacts could be found within the reservoir during periods of drought. Still further upstream, Ayers' 1965 survey located 18 sites in Apco's reservoir and he estimated there should be a season's work at a cost of about $11,000. My survey in 1969 added 40 more sites and 11 fishdams to the catalogue and I estimated there should be at least two season's work at an estimated cost of $19,000 per season.

The New River is the only river in the eastern United States whose headwaters are in the Blue Ridge Mountains and which flows through the Appalachian Mountains. It is variously known, according to geographical locality, as the New,

Kanawha, Ohio, or Mississippi. The Apco reservoir was in an area of tundra 13,500 years ago, and 30 miles away (Saltville, Virginia) at that time the list of extinct animals roaming the area included long-armed sloth, mastodon, wooly mammoth, caribou, moose, bison, woodland musk-ox and musk-ox. That period is also that of the oldest dated (C-14) remains of man in the eastern United States.

The oldest projectile points from the area are Clovis. These were not found during the surveys, which did discover a sequence of type-dated points that complement Joffre Coe's discoveries in the Piedmont of North Carolina to the east and those of Bettye Broyle's at St. Albans 160 miles downstream from the reservoir. Thus the total range of prehistoric man's activities is expected in the reservoir as it is presently known.

The reservoir is also in a geographical area where Late Woodland pottery series are relatively abundant. Three series, Dan River (sand tempered), Grayson (crushed igneous rock temper) and Smyth (crushed soapstone temper) entered the reservoir from the south and southeast. Thirty-five miles down New River from the lowest dam is the city of Radford, Virginia for which Clifford Evans named the Radford series (crushed limestone). This ware is widely and prominently distributed to the north and west, yet the reservoir surveys found only traces. Even more striking is the geographical distribution of the New River series (shell temper) named for the river. This series diffused into the area surrounding the reservoir by way of New River and the Holston, Powell, and Clinch rivers, but was not discovered by the surveys. What isolated the reservoir from the diffusion of the New River and Radford wares? Since no earlier pottery was found by the surveys, is there evidence of pottery that would be coeval with Adena and Hopewellian ceramic in the mid-west, or Vinette in New York State?

Occupational sites vary from small camps to large villages. Excavation should discover local cultural organizations and, by comparison with more distant discoveries, make possible a wider interpretation of regional sequences. A single question

from among many will serve as an example. Are the Late Woodland sites related to the Cherokee who are historically known to have lived quite close by?

The absence of survey reports in FPC files is admitted by Apco. The Durham Morning Herald for 18 September 1975 gives the following account, "An Apco spokesman said the records of the company's general counsel indicated Holland asked that the report not be made public because of archeological scavengers who might destroy sites and carry off artifacts." This was taken from my covering letter with the survey report which reads, "My experiences so far indicates your office may be asked to reveal the contents of this report to unauthorized persons. I request that the report be used for official purposes only in the pursuit of obtaining the licenses for the dams." I go on to say that if unofficial requests were made they should be referred to me. The statement by Apco's spokesman seems to be face saving, and I was inclined at first to believe Apco had made a serious error of omission, one similar to forgetting the day of one's marriage. Apco's meager offer of survey money to Ayers and me contrasts with that budgeted by FPC; and the final total cost estimates from Ayres and me are more than modest compared to a nearly half billion dollar project. Is it conceivable that Apco was trying to save money? Or is archeology so trivial to a large corporation it can be easily ignored? If there is an affirmative answer to the last question, prehistory has much for which to thank the environmentalists (who are often described as "rabid") in the protection of a limited natural resource.

C. G. Holland
Department of Anthropology
University of Virginia
Charlottesville, Va. 22903

Geology and Archaeology

Dear Sir:

My congratulations to Dr. Rapp for his very fine article in

JFA 2 (1975) 229-237 concerning the role of the geologist on an archaeological field staff. As an archaeologist with a B.S. and M.S. in geology, who is currently engaged part time in consulting practice, I can appreciate the value of such an article.

Many archaeological expeditions have used geologists in the past with great success, but this was not widely known. Articles such as this point out the value of such an individual to a field party.

Perhaps the time has come to organize a national conference dealing with archaeometric techniques. Such a session could result in many archaeologists being enlightened as to what technical help they now have at their fingertips.

Sincerely yours,
Wade Meade, Associate Professor of
Ancient History and Archaeology
Louisiana Tech University
Ruston, La. 71270

Table 2: Estimated Costs of Survey and Evaluation

Background Research	
(Documentary, Ethnographic, Ethnohistoric, Historic, Environmental)	$ 35,000
Field Survey of Flood Pool	
Basic survey of 40,000 acres at ca. $7.00/acre	$282,800
Deep Testing on floodplains	5,000
Field Survey of Surrounding	
Take area-basic survey of 2,984 acres (25'x345 miles and 200'x80 miles) at ca. $7.00/acre	$ 20,888
Field Survey of proposed state parks (basic survey of 6,400 acres)	$ 44,800

Field Survey of Transmission lines (65 miles at $300/mile)	$ 19,500
Estimated Cost of Site Evaluation (Projecting 200 prehistoric sites and 100 historic sites at $500 per site)	$150,000
	$557,988

Note: Does not include road relocations, future development sites, or areas of secondary impact.

PRELIMINARY CULTURAL RESOURCE RECONNAISSANCE OF THE NEW RIVER AREA OF NORTH CAROLINA AND VIRGINIA

April 12, 1976

PRELIMINARY CULTURAL RESOURCE RECONNAISSANCE OF THE NEW RIVER AREA OF NORTH CAROLINA AND VIRGINIA

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PRELIMINARY CULTURAL RESOURCE RECONNAISSANCE OF NEW RIVER AREA OF NORTH CAROLINA AND VIRGINIA

(Purpose and Method)

On April 7 and 8, 1976, the National Register conducted background research and a preliminary reconnaissance survey of the North and South Forks of the New River and its tributaries in North Carolina and Virginia. The background research and follow up of the survey included consultation with the offices of the North Carolina and Virginia State Historic Preservation Officers, which indicated that no organized cultural research surveys on properties of historical and architectural significance have as yet been conducted in the environmental impact areas of either the Blue Ridge project or the area proposed for designation as a Wild and Scenic River. The archeological resources have been handled in a separate report by the Interagency Archeological Services Division. The purpose of this reconnaissance was to get some background on the history of the area and to provide a preliminary assessment of the type and extent of historically and architecturally significant resources located in the area, an evaluation of their significance, an appraisal of the needs for more extensive cultural resource surveys in the project areas and an estimate of the cost of recovery of historically and architecturally significant resources identified in the field reconnaissance. The background research included, in addition to consultation with the offices of both the Virginia and North Carolina State Historic Preservation Officers, a literature search and consultation with a number of individuals with information on the area. Attached is a complete list of the sources of information identified in this research.

The field survey was conducted on April 7, by Katherine Cole, architectural historian, and Carol Shull, historian, of the National Register with the assistance of the North Carolina State Historic Preservation Officer, Dr. Larry E. Tise, Director, Division of Archives and History, State Historic Preservation

Officer, Department of Cultural Resources, 190 East Jones Street, Raleigh, North Carolina 27611 and Michael Southern, an art historian on his staff. The method of field survey was twofold. A helicopter was used to spot and photograph properties and areas of potential significance. The area surveyed by air is delineated on the enclosed map. Most of the area covered was in North Carolina. To the extent possible, the properties identified by air and others spotted from the ground were subsequently photographed as part of a drive through by automobile conducted the same day. A preliminary inventory of properties of potential or certain historic or architectural significance identified and photographed by air and ground is attached with an assessment of the properties' significance.

RECOMMENDATIONS ON FURTHER CULTURAL RESOURCE SURVEYS AND COSTS OF RECOVERY OR MITIGATION

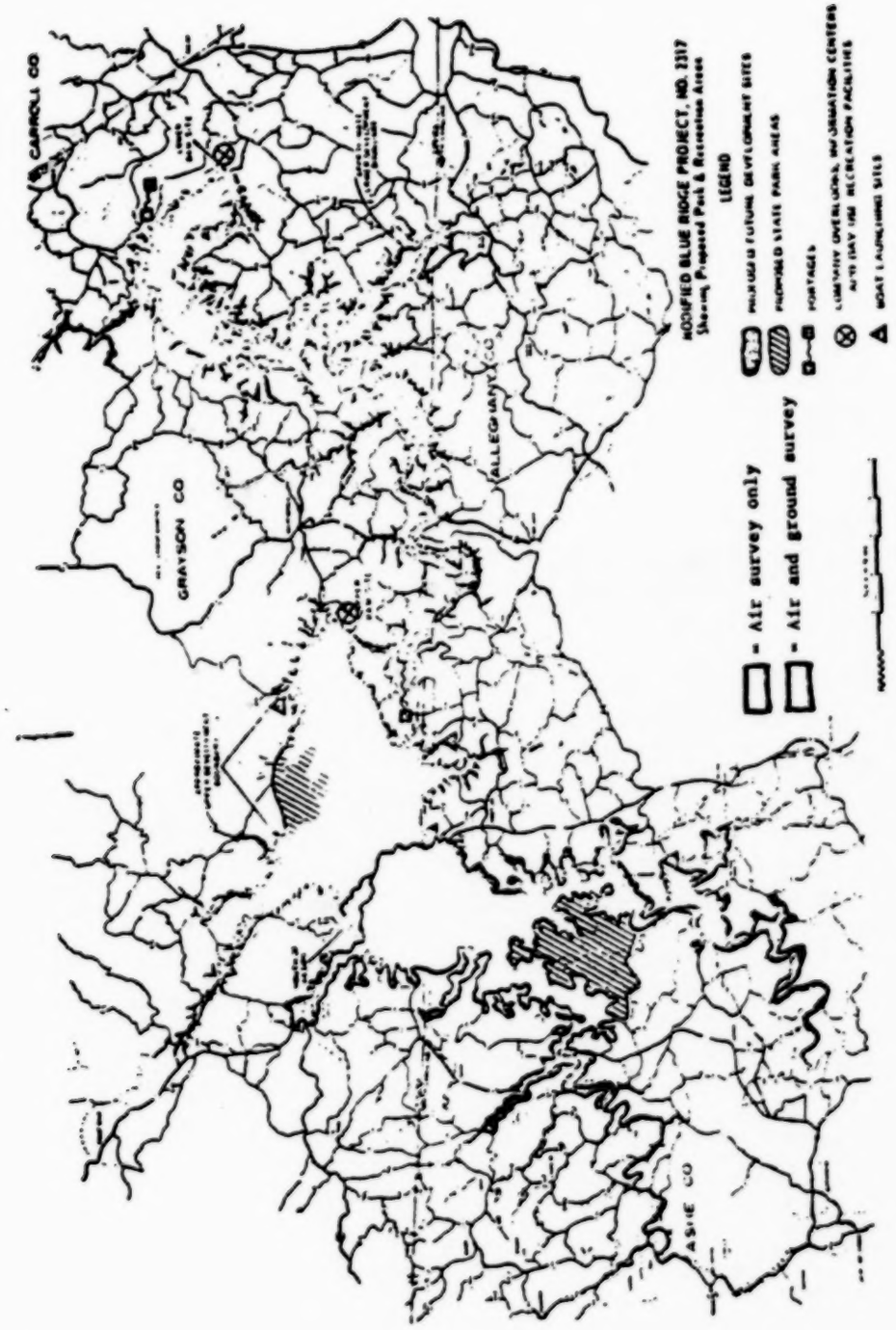
An indepth survey by professionally competent historians and architectural historians of the entire area to be affected by both the Blue Ridge project and the Wild and Scenic River designation is recommended. Along with a more thorough literature search, a comprehensive field survey is recommended. This field survey should be concentrated on the river and its tributaries to locate sites of early settlement, historic farm structures and complexes and additional grist and textile mills, as well as other resources. Small communities, the sites of mineral springs, and early mills should be given careful attention to identify remaining cultural resources. An attempt should also be made to locate the site of the Battle of Big Glades. To make an accurate evaluation, the cultural resources located in the area should be compared with other known cultural resources in the locality, the State, and the Nation.

ing properties of historic and architectural significance are The field survey indicated that a high proportion of remainlocated along the river and its tributaries, areas to be flooded

by the Blue Ridge project. A breakdown on the next sheet provides a conservative estimate of the cost to recover or mitigate the adverse effects of the Blue Ridge project on the most significant cultural resources identified in the one day reconnaissance. It should be emphasized that only a small portion of the total number of historically and architecturally significant resources (41 properties inventoried) were identified and only about 25% of the flood pool area of the Blue Ridge project was surveyed. The greatest percentage of historically and architecturally significant resources are likely to be located in Virginia, where the inundation area is largest. Most of the project area in Virginia was not surveyed.

ESTIMATED COSTS OF RECOVERY OR MITIGATION

1. Field's Manufacturing Company Cost of moving, including machinery, and restoration.	$ 500,000
2. Cochran Grist Mill, Dog Creek to move and restore.	$ 300,000
3. Two general stores To move and restore; $100,000 each	$ 200,000
4. Vernacular Houses (12) To record; $2,000 per house.	$ 24,000
5. Octagon House To move intact and restore.	$ 125,000
6. Farm complex with 9 outbuildings. To record.	$ 5,000
7. Loghouse To move and restore.	$ 125,000
8. Three Victorian Houses To move and restore; $100,000 each.	$ 300,000
TOTAL	$1,579,000



ASSESSMENT OF NATIONAL REGISTER QUALITY

The entire area we surveyed appears to qualify for listing in the National Register as a district because of its historic, cultural, and architectural cohesiveness and because of its integrity and lack of intrusions. The area embodies the distinctive characteristics of the late 18th and 19th century rural life as exemplified in the architecture, industry and rural isolation. In addition, a number (32) of the buildings appear to qualify individually for listing in the National Register. *These are marked with a star.* The Field's Manufacturing Company may be of national significance.*

HISTORICAL BACKGROUND AND ASSESSMENT

The New River and its tributaries form part of the oldest river system in North America. In addition to being the oldest river in North Carolina, the New River is also the only river in the State which flows north. The New River itself is probably the most historically significant feature of the entire area since the history, settlement patterns, and economic development of the region have been shaped by the river and its tributaries. The flooding of the New River would completely change the orientation and obliterate much of the character of the entire area.

According to published sources, the New River was first "discovered" in 1740 by a party headed by a Virginian, Major Abraham Wood, and named Wood River. It is unclear how and when it was renamed the New River. The area was inhabited by the Cherokee, Creek and Shawnee Indians. About 1752, the well known Moravian, Bishop Spangenberg, explored and surveyed the region to identify areas for potential settlement by members of the Moravian Church. In the 1760's and 1770's settlers of primarily Scotch Irish, German, and English

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*All of the properties identified in the reconnaissance are mapped on U.S.G.S. maps retained in the Office of Archeology and Historic Preservation.

descent began moving into the area and settling on homesteads located on the New River and its tributaries. Treaties with the Indians and the establishment of a policy for the distribution of farm land to settlers in North Carolina in the late 1770's were important factors in opening this region to settlement. Although at this time it is unclear exactly how the inhabitants of the area paricipated in the Revoluion, at least one Revolutionary War battle, the Battle of the Big Glades in Ashe County, is recorded in the published literature. Ashe County, North Carolina was formed in 1799.

The mountainous topography of the area and the river itself with its twisting course made it difficult to construct transportation routes and bridges, factors which contributed to the isolation of the region. At least in North Carolina, the area was known as the "Lost Provinces." This isolation has continued to the present and accounts partially for the continuation of a certain life style and old customs, including sorghum syrup making, dulcimer playing and other cultural anachronisms which contribute to the area's historical significance. The County seat and largest town in Ashe County is Jefferson with a population of approximately 943, an indication of the sparseness of population in the region. While not considered under the mandate of the National Register program, the customs and life style in the area should be carefully studied and recorded by cultural anthropologists.

The economy of the region developed around small homesteads established on the river and the numerous creeks which form its tributaries. The first trails were along these streams. In addition, the river and its tributaries provided a source of power for the grist and textile mills which were established very early in the area. The development of water powered carding machines, in particular, encouraged the establishment of textile mills. Two of the most historically significant properties identified during the field survey were the Field's Manufacturing Company, an 1884 Woolen Mill on Wilson Creek in the little town of Mouth of Wilson, Virginia and the grist mill

on Dog Creek. The Field's Manufacturing Company, described in more detail in the attached inventory, which would be completely destroyed by the Blue Ridge project, is, according to the Historic American Engineering Record and Tom Leavitt of the Merrimack Valley Textile Museum, an extremely rare, perhaps unique, industrial complex in which some of the old equipment, including at least one ca. 1884 carding machine originally run by water power, remains. The scale of operation, age of equipment, original site and continuation of production of woolen textiles as well as its longevity of operation make it likely that this mill would qualify as a National Historic Landmark. Its inundation would be a significant loss. The mill's value is also enhanced by its location in the unincorporated village of Mouth of Wilson, where life historically has revolved around the mill, as it does today. Cochran Grist Mill on Dog Creek is a 19th century water driven mill with its ca. 1870/1890 Fitz Wheel still intact, one of about a half dozen of such wheels recorded by the Historic American Engineering Record. It has also retained several mill-related outbuildings and is representative of the many grist mills which once operated on the New River and its tributaries.

Other early economic development of the region centered around iron and copper mining. At least one historically significant mine, the Ore Knob Mine, which was important for its production of both iron and copper, is located in the project area.

The springs in the area were also historically important as a source of curative mineral waters. The most famous of these springs, Healing Springs, also in the inundation area, was the site of a spa and hotel. During the 1880's and 1890's Healing Springs and its waters were well known. The waters were bottled and distributed over a wide area.

The preliminary survey indicates that the New River area with its 19th century farm complexes, Victorian farmhouses, mills, rolling farmlands, and small communities, is particularly

significant because of the high degree of historical integrity which it has maintained. Due to its isolation and low population, there are very few 20th century intrusions.*

ARCHITECTURAL ASSESSMENT

Accounts relate that when the New River was settled by Europeans in the mid-to-late-18th century the first buildings were log, perhaps stables which the settlers shared with the stock. Later one-and-two-story frame buildings were built and gradually expanded as the need arose and the funds became available. Brick structures and log structures have not remained in any quantity. Most of the log structures have been covered over with later additions or with clapboarding.

At first inspection the architectural trend appears to have been to build a one-or two-story 4-bay wide, 2-bay deep structure with end or central chimneys in log (18th and early-19th century) or frame (19th century), and then to add on an ell during the late-19th or early-20th century. At the same time, or slightly later, Victorian decoration was added to the structure. Most of the farmhouses have changed very little after this Victorian face-lift. The unusual architectural features of the area include a high ratio of remaining outbuildings, an unusual concentration of rounded porch victorianizations, an octagon house, intact 19th-century town plans with structures remaining, a large number of central-chimney plan farmhouses, and two milling operations, grist and wool.

The farms with outbuildings appear to date from the mid-19th century. The outbuildings appear to have been in continuous use since construction and show evidence of maintenance and adaptation. Out buildings we accounted for included cattle barns, silos, privies, wells, dairies (butteries), pigsties, corn cribs, tobacco barns, mills, carriage houses, spring houses, and

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*Much of the information in this summary is based on a cursory view of secondary source material. Further documentary research must be conducted to verify its accuracy.

root cellars. In many cases where the building itself did not remain there was clear evidence of its location and, often, above-ground remains.

While the octagon mode is more common in southwest Virginia than in other parts of the United States, it is nevertheless significant. It is particularly interesting to find an octagon in this area where there is an unusually high incidence of curved Victorian porches. While there was no time to conduct even a cursory study, it might be argued that there is a style development of the form which is limited to the river valley, and almost certainly a builder or carpenter who made the style his specialty.

The intact town plan and associated structures of Mouth of Wilson, for example, display a socio-economic development as well as an architectural one. The town itself began around an early grist mill on the site of the present woolen mill, Field's Manufacturing Company, The Field's house, general store and motor company have been the social center and economic base for the area since the late-19th century.

Several small crossroad towns and general stores have a similar unifying effect on the area. In every store we entered we found late-19th century store equipment: counters, soda and ice cream containers, stockrooms, and shelving. In many cases it appeared that the stock of the store included very few "modern items." The stores were easily identifiable not only because of their location but because they had retained the false fronts and store windows we associate with the 1880's to early-20th century. In addition to the structures, it is worth noting the zig-zag split-rail hand-hewn fencing which crosses the area, and the examples of dry-wall construction, particularly in chimneys and foundations.

INVENTORY

* 1. Frame house, 2 stories, modified rectangle, gabled roof, stone exterior end chimney; front shed porch, partially

enclosed; rear shed extension with 1-story gabled wing; 1-story, gable-on-hipped roof building. 19th century.

2. Frame house, 2 stories, modified rectangle, gabled roof, central chimney, front full-width 1-story wrap-around porch, center entrance, rear shed addition; several frame outbuildings. 19th century.

* 3. Frame house, 2 stories, rectangular, gabled iron roof, central chimney, front nearly-full width hipped porch with center entrance. 19th century.

4. Frame house, 1-story, rectangular, gabled roof, front full-width partially enclosed wrap-around porch, center entrance; frame outbuildings. 19th century.

5. Frame house, 2 stories, modified square, pyramidal roof, brick central chimney with corbeling, front full-width hipped porch, rear 1-story shed wing, side bay window. Mid-late 19th century.

* 6. Frame house, 2 stories, rectangular, gabled roof, brick exterior end chimney, center front 1-story hipped porch with decorative balustrade; 1-story gabled outbuilding of log construction; several other gabled and shed roofed frame outbuildings. Mid to late 19th century.

7. Frame house, 2 stories, T-shaped; gabled roof sections, main block roof gone; stone exterior end chimney, rear 1-story wing with side enclosed shed extension and rear exterior end chimney. 19th century.

* 8. Frame house, 2 stories, rectangular, gabled iron roof, stone exterior end dry construction chimneys, front and rear shed porches. 19th century.

* 9. One-and-one-half-story frame house with a raised basement on one side and a hipped roof of standing seam metal pierced by 3 hipped roof dormers. The major decorative element is a veranda 3/4 of the height of the facade which extends across the front facade and left side turning the corner with an unusual round segment. Circa 1880.

*10. Two-and-one-half-story frame house with a hipped metal roof with a hipped roof dormer. The house has a veranda which surrounds the house on all four sides. The veranda is rounded at the corners and rests on simple round columns. Circa 1860-1870.

*11. Frame two-story T-shaped house with a standing seam metal hipped roof. Two porch systems form the house's major decorative elements. One is a 2-story gabled porch with decorative elements immediately behind one side of the top of the T. The other is a 1-story veranda which encircles the stem of the T with unusual, smaller elements at the corners. Circa 1890.

*12. Two-story frame hipped roof house with a one-story veranda on 3 or 4 sides. The veranda is supported by columns resting on raised brick piers on a brick porch foundation. Circa 1900.

13. One story frame hipped roof house with a hipped roof dormer. A partially enclosed veranda covers 2 sides with a rounded section at the corner. Circa 1900.

14. Two story frame house with rear additions. Gable roof with a curved veranda, partially enclosed on 3 or 4 sides. Circa 1860.

15. One story frame house with a raised basement. Hipped metal roof, partially enclosed veranda on 2 sides with a hipped roof rounded at the central corner. Circa 1900.

*16. One story T-shaped public building. Metal gable roof with small belfry at end of T. Circa 1900.

*17. Frame one story Octagon with a raised brick basement. A veranda is attached to six sides of the structure and the pyramidal roof slopes to a central chimney surrounded by cupola-like decoration. The window and door surrounds are polygonal at the crest. Circa 1875.

*18. Mouth of Wilson-district includes:
2 large 2 story commercial manufacturing structures "Fields Motor Company" and the Fields general store. Frame. 19th century.
1-story brick commercial structure. 19th century.
Frame 2-1/2 story house with metal gable and hipped roofs. Elaborate porches. Late 19th century.
Frame barn structures, one in ruins. 19th century.

*19. Field's Manufacturing Company. 2-1/2 story frame, low gable roof. Enclosed 1-story frame additions, irregular fenestration.

*20. Two-story, frame, 2-1/2 story corner tower, 2 story-2 sided bay, first floor porch. Early to mid 19th century with mid & late 19th century additions and details.

*21. Two-story frame store, shed roof with parapet, paired braces on cornice, unusual w[illegible]racket beneath parapet. Late 19th century.

*22. Two-story frame, modern addition to side, full 1st story windows on one side, shed roof with parapet. Late 19th century.

23. Two-story brick, gable roofed residence with end chimneys, 3 bays wide. 19th century.

24. Two-story frame house with gable roof, pedimented dormer, 1-story shed porch, 1-1/2 story leanto. 1-story gable roof outbuilding to rear. Mid 19th century.

*25. This is a 2 story log structure with metal seamed roof and 1-1/2 story weatherboarded addition, and 1-story porches on front and back. Addition has mid 20th century window grouping. Stone (?) foundation. The square corner timbering of the structure was developed by the English and is similar to the joining in British half-timber construction. Early date perhaps as early as the 18th century?

*26. Partially ruined sites. Above ground archeology with collapsed timbers and brick walls, or single standing wall, chimney or outline of foundation. Historic archeological significance.

27. 1-story frame barn with partial stone foundation, vertical wall planking, full-width side shed, end gabled tin roof. 19th century.

*28. One-and-1/2 story frame barn with gambrel roof, lattice work under eaves, and open and closed side sheds. Late 19th century.

*29. Two-story frame T-shaped dwelling with cross-gabled tin roof; center entrance; carved bargeboards, paired roof brackets, frieze and front and side porch balustrades and posts, Eastlake influence. Circa 1880's.

*30. Two-story frame T-shaped dwelling with tin gabled roof, center entrance, full-width 2 story front entrance porch with sawn balustrade and posts. Mid 19th century.

*31. Two-and-1/2 story irregular shaped dwelling with 1st and 2nd story center entrances, front and side projecting galleries and bays, lace-work barge boards, front off-center entrance porch with centered pediment. Early 19th century with later additions.

*32. Two-story frame dwelling with gabled tin roof; center 1st and 2nd story entrances, each with side lights, full-width front 2-story porch with enclosed 2nd-story end bays and decorative center balustrade. Mid 19th century.

*33. Two-story frame hipped dwelling with paired roof brackets; center 1st and 2nd story entrances, each with decorative transom and side lights; 2-story porch with two story pediment. 19th century.

*34. Two story frame T-shaped dwelling with exterior end chimneys and center 2-story front gabled porch with shingled pediment and simple turned supports. Late 19th century.

*35. Large 2-1/2-story frame hipped dwelling with full-width front hipped porch with low center pediment and paired supports, and large centered gabled dormer on each side. Early 20th century.

*36. Frame 1-1/2-story dwelling with tall hipped roof with large center front gable on full width 1-story entrance porch. Circa 1860.

*37. Y crossroad of settlement: 2-story frame house with gable roof and longitudinal front porch, one story rear addition. c.1860's. and

*38. 2-story frame store building, gable roof, stepped gable false store front, 1 story shed attached on rear gable end.

*39. 2-story frame store building, hipped tin roof, one-story side and rear ells. 1st story supported by square brick columns creating a motor portico at the front. Circa 1900.

40. 2-story frame farmhouse with shed roof porch extending full length of front; Stone chimney at end; rear ell and shed additions. Late 19th century.

*41. Grist Mill. 2-1/2 story frame mill with tin gable roof and fairly unusual diagonally paneled siding, built over race-way, partially supported on creek bank and stone dam with bearing on corner dry-laid stone column. Early 19th century.

* a) 3 adjacent, 1-story frame structures behind mill along road probably related to mill (possibly worker housing, storage, or sales.)

* b) 2-story frame house with gable roof. Later addition. Possibly mill owners house. Mid 19th century.

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* = National Register quality.

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